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Briefing

IBM raises its prices

IN a New Year surprise for users, IBM has increased purchase and rental prices on the 42, 8100 and almost all other products apart from 303X line.

US rents and leases rise 7% purchase prices 5% on all computer products, while purchase prices of word processors rise 7%. The sting in the tail is that monthly maintenance charges rise between 10% and 20%.

Purchase prices go up on January 7 and rents and leases on April 1.

Ferranti profits up

HIT by engineering and other strikes, Ferranti managed a 9.3% improvement in pre-tax profit to £3.5 million on turnover up 15.5% at £92.3 million for the six months to September 1979. The National Enterprise Board is not expected to sell its 60% stake in Ferranti before the end of the financial year, but chairman Sebastian de Ferranti and director Basil de Ferranti have sold parts of their shareholdings. Sebastian now has 4.3% of the total shares and Basil 6.1%.

Personal debut

HEWLETT-PACKARD has today moved into the personal computer market with the system that has carried the company code name of Capricorn (CW, February 1, 1979). The existence of the system has never been officially admitted by the company but it has long been forecast and is expected to use the Viscalc software from the US supplier Personal Software (CW, September 27, 1978).

Nexos director

JOINING Nexos as sales and marketing director is Peter Hooton, formerly a staff manager with IBM UK's Data Processing Division and boss of Muir Moffat, now managing director of Nexos. Hooton is also joining the board of the National Enterprise Board's office systems firm.

Giro order

THE Giro in Sweden has taken a similar approach to the UK Giro by going over to low cost OCR workstations for capturing data from remittance documents. The Swedish Giro has just ordered 43 Burroughs S8900 systems worth nearly \$3 million, while two years ago the UK Giro decided to replace several big Recognition Equipment OCR systems with about 150 Lundy Farrington workstations.

Plato for AT&T

CONTRACTING to develop a stand-alone terminal Plato computer system for AT&T, the company has been awarded a contract worth £20 million. The system is a stand-alone terminal Plato version, but AT&T is believed to be interested in a terminal which operates separately but refreshes its memory periodically from a mainframe.



Pet for crossword winner

WINNERS of the Master Resources Ltd tenth anniversary crossword competition, which was co-sponsored by Computer Weekly, came to London just before Christmas to receive their prizes.

MRL managing director Ron McQuaker (right) presented the first prize, a Pet Model 1 personal computer with 8K of RAM and an integral cassette recorder, to David Yates, seated at the keyboard. Yates is concerned with research in the Numerical Analysis and Computer Science Department at the National Physical Laboratory, Teddington, Middlesex.

The second prize, a case of wine given by Computer Weekly, was won by Professor

Gamma bought by US company

THE financially ailing UK systems house, Gamma Associates, is to be bought by PRC International, the US owned firm that used to hold a majority share in Logica.

PRC expects to finalise the Gamma takeover by the middle of this month but is not prepared to reveal yet what changes if any will be made in the management of the Nottingham based systems house.

PRC International is part of the Planning Research Corp of Washington DC, a company which derives roughly half its total worldwide revenues of \$270 million from information sciences and the remainder from engineering and architectural consultancy. PRC employs 7,000 people including 800 in the UK and operates in 42 countries.

Tom Walker, who is in charge of PRC International's information sciences activities in Europe, told Computer Weekly that he was approached by Gamma in mid-December. PRC had been on the look-out for European acquisitions since it sold its hold-

IBM solution for System 38

THE outcome of IBM's gargantuan effort to get the System 38 to perform to specification is a dramatic increase in minimum main memory capacity. The minimum on the smaller Model 3 has been more than doubled from 512K-bytes to 1.28 megabytes, with an option of a further 256K-bytes to bring it up to 1.5 megabytes. The Model 5, which previously had main memory capacities of 1 megabyte or 1.5 megabytes, now comes with either 1.79 or 2 megabytes. The smaller processor cycles at 1.2 microseconds and uses IBM's slow 64K-bit device; the larger cycles at 800 nanoseconds and uses a hybrid 32K-bit part.

First UK deliveries are now set for October and IBM has acted to reduce pressure of demand on the smaller 38 by proposing to double maximum main memory on System 34 but not make it available in the UK until April 1981. American users will get it in January 1981. This move looks as clear an indication as IBM ever gives that it plans a long life for System 34, which was announced over two years ago (CW, April 21, 1977).

First UK System 38 deliveries are now scheduled for October this year. IBM originally planned to make first deliveries in the fourth quarter of 1979 (CW, October 28, 1978).

IBM has priced two configurations, but since they are quite different from the ones it priced previously, it is not clear whether users will have to pay

Inmos picks Bristol for first factory

BRISTOL has been chosen by the National Enterprise Board's microelectronics venture Inmos, as the location for its first UK production facility, a 150,000 square foot factory that will cost £24 million and employ 1,000 people by 1983. Inmos executive director Ian Barron said that the Bristol factory would be producing "tens of millions" of memory devices in 1982.

The first device will be a 16K static RAM followed by the 64K dynamic device that Inmos believes will be a commercial success despite its late arrival on the market (CW, November 8, 1979). Production of microprocessors will start in 1983.

The factory is to be built near the M23 motorway on the north-west side of Bristol.

The National Enterprise Board has endorsed the Inmos decision to go ahead at Bristol, which is already the location of the Inmos head office. But a question mark still hangs over the whole project because the Inmos Secretary, Sir Keith Gordon, has still not approved the investment of the second £20 million of the £60 million assigned to Inmos by the previous government. About £8 million of the first £25 million has already been spent so the second tranche of money is essential for the Bristol factory to be built.

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INSIDE THIS WEEK'S CW...

INTO THE EIGHTIES	ALSO
In our first feature the new decade Computer Weekly writers look at what the next 10 years could bring in areas ranging from mainframes to microelectronics and from programming to the impact of computing on society. Page 2/3	People Downtime by Chris Michie's Privateview Letters to the Editor Plessey drops optical memories Page 8/9 for programmers Puzzle Software File On Spot NCC privacy survey People and Events Company News Communications News More News Product Notes The Sales Bit Prize crossword Official mainframes
YOUR JOB LOT	
The New Year is traditionally a time when people start thinking of changing jobs. How will the job scene change during the Eighties? George Powney of the National Computing Centre considers the prospects for data processing staff. Page 16	

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Diploma 1534

Cobol...a time for change

IN the beginning was the word, and the word was a mnemonic. Programmers worked in assembly languages.

In 1954 came Fortran, designed for scientists to solve their problems in a language suited to expressing these solutions without recourse to the mental exactitudes required in low-level language programming. The attention of the programming community was concentrated on arranging data around a central algorithm to solve a specific problem.

Programs tended to be small and relied on auxiliary storage, often tape, to hold intermediate results for later processing. Anything larger was accomplished by overlays, and programmers had to think less in elegant, natural solutions to a given problem, but more in terms of machine and device efficiency.

Horizons were limited. Computers were to solve the problem at hand rather than to attempt to understand the interaction of data and program structure. To have done so would have been like da Vinci's aeroplane design — too far ahead of the technology.

That was the state of art in the Fifties. It was at that time that Cobol was created to respond to the needs of the business community to design a language suited for expressing their particular needs. Cobol was the

result.

This initial version was extended to include report writer and SORT (1962), then again to include mass-storage I/O and table-handling (1965). Cobol met many of the business requirements of the day. Its structure was intended, by use of divisions, to provide a standard pattern for documentation and the use of its English-like syntax to make programs self-documenting and readable to non-programmers.

Since that time computing power has multiplied to such an extent that problems are now tackled which before were beyond consideration. Many non-programming users now are able to tap this power by means of packages and very high-level interactive query-languages. Programming is beginning to grow up. Languages and methodologies reflect the complexity of the systems attempted and the support given to the non-programming computer user.

Cobol has been successful primarily because of its ease of use, documentation and transferability, although it does not have the power of later, more generalised languages. The following paragraphs examine Cobol from the point of view of structure and readability, ease of use, power and uncontrovertedness.

Only details are examined, conclusions are left to the reader. The only point which cannot be shown is that of program size. Syntactic idiosyncrasies, restrictions in expression or structure may register as a minor nuisance individually but have an exponential effect on the readability of a large program.

The power of a language is measured by the conciseness and naturalness in which a problem can be unambiguously stated. The converse of this is also true: that the syntactic and structural restrictions of a language may limit the thought of the problem solver.

Too great a restriction in language expression, however, leads to convoluted solutions. The following contrivances which apply especially to Cobol have

been solved by designers of later languages.

Reserved words. Cobol's reserved words have always created a problem, not only to the applications programmer writing a new program, but also especially when extensions to the language are required. The new construction, table-handling (1965), or list-processing (Cobol proposal 1971) automatically create new reserved words to express the new "lacked-on" concept. This makes all previously written programs suspect; they may well have used the newly forbidden words.

Data types. Cobol allows only variables whose structure is known at compile time. Cobol also disallows bit strings, floating point and control variables.

Data structures and operations. Cobol supports two only of the five types of data structure currently available: arrays and record structures. String, stack and list operations are inexpressible. Of the supported structures, array operations are not very concise.

A Cobol array cannot have variable bounds, neither can the lower-bound of an array be associated with a subscript value other than that of 1. No array operations are available. To increase the contents of each array position by one (whatever its dimensions) — the PL/I statement

ARRAY = ARRAY + 1;

has no Cobol equivalent. Cobol requires an iterative process to be explicitly stated either using PERFORM or GOTOs — each method being verbose and lacking readability.

Declaration and initialisation of Cobol arrays is verbose. Consider the Cobol equivalent of the PL/I statement:

DECLARE ARRAY (3)
CHAR INIT ('A','B','C');

Built-in functions. Built-in functions are inclined in a language definition because they represent an efficient and accurate solution to a frequently-used operation.

Examples of uses of built-in functions, of which, at present, Cobol has none, are:

INDEX — to search a string for a given character or sequence of characters.

ADDR — to return the storage address of a variable.

DATE — to return the current date.

DIAGNOSTICS AND DEBUGGING. The essence of diagnostic power in a language is the ease and conciseness with which it can be used in comparison with the readability and volume of its output. Programmers use these facilities both to create test data and to prove their program is working correctly. Cobol's execution-time diagnostics are restricted to READY TRACE, EXHIBIT (NAMED) and DISPLAY.

The PL/I statement, for example

PUT DATA

lists every variable currently existent in the program both identified by name and converted to a readable format. There is no Cobol equivalent.

Programmers can help to ensure readability by following certain general rules. These, to a great extent, are independent of which high-level language is used and are the use of: meaningful names; indentation of code; blank lines; comments; or coding only one statement per line.

Readability is also enhanced if the program, or model solution of a real-world process enables the reader to scan the program text from top to bottom and quickly grasp the essentials of what is happening.

The primary and conditional code may be highlighted by indentation and spacing. It is a question of style that many programmers prefer to present a series of subroutine references (CALLS or PERFORMS) at the highest level.

It is in structure and readability that Cobol is lacking. The following arguments illustrate this:

● Cobol conditions are delimited by a full stop. Many experienced programmers have been nonplussed at one time or another, by logic errors which later have been found to have been caused by a misplaced full stop. Finding the problem is difficult, mainly because the programmer, on reading the text and looking for a logic error, tends to read what he wants to see, passing over the simple syntactic omission. Recent languages such as Algol or PL/I delimit condition code by more definite and readable END; statements.

● In structured programming constructions Cobol has no DO UNTIL. The PERFORM UNTIL in Cobol is actually a "DO WHILE (condition is false)".

"PERFORM (action) UNTIL (condition is true)" implies syntactically, that the action is processed first, then the test for the condition truth is made. In Cobol the test is made first then the action is taken. A small point, but hardly readable without certain mental gymnastics.

● Cobol has no CASE statement (the multiway branch, process and single-exit con-

"Cobol has outlasted its usefulness as an innovative tool; it now seems to be used as a comforter for programmers afraid of the dark," says Ian Clark, our guest writer this week on Page Six. This article aims to refute the claim that Cobol is powerful and readable and examines some of the established myths of the language, comparing it where necessary to PL/I.

Clark has worked in computing for the past 15 years moving from IBM to specialisation in the oil industry and now works for McDermott in Dubai.

It has instead the GOTO DEPENDING ON — but this depends on other GOTOs to link the processing up to a single-exit again. Failing this, a series of nested "IF THEN ELSE" clauses meet the logic, if not readability requirements. Algol has the CASE OF statement, as does IBM's PL/I.

● Cobol has no in-line iteration code (DO REPEAT). Iteration is accomplished by the PERFORM statement which enforces a reader of the program text to visually jump around almost as much as if GOTOs were used. The real use of out-of-line code is to define a common function accessed from different places in the program text. It is a device to ensure accuracy by reducing the amount of coding effort, not a construction existing because of a defect in the language structure.

● Cobol's variables are created at the head of the program text in a DATA DIVISION. Although for many purposes this is quite a good convention, there is no opportunity of declaring variables near to the code which is to use them. Cobol may not be so readable or powerful as one would wish. It has been a useful language in the popularisation of commercial computing. It has the advantages of being well-known and many commercial systems are written in Cobol. So why convert? Are the costs outweighed by the benefits? Some points to recommend the process are listed below.

1. It is a watershed time for computing. If the computing shop shows itself inadequate in supporting the corporate information requirement, line management will opt for department-oriented microcomputers to achieve results. A better solution would be to allow for more powerful information processing facilities (time sharing, database processing) and equally powerful languages to achieve the result.

2. Later developed languages such as PL/I are so much more powerful than Cobol. Text processing, modelling, list-

processing, relational calculus, diagnostic aids, array operators, etc., are available; the list is considerable. Also, having no reserved words and a better underlying structure, future expansion of the program capability is available without disruption.

3. The power of the language also affects development speed. Anyone who has taken an agonisingly coding up a Cobol data division and the procedure division with all its noise words to simulate English cannot fail to code quicker using a concise language such as Algol or PL/I.

4. The conversion process involves people rather than programs. The average shelf-life of a program is two years. It cannot be discounted as a maintenance problem but can be minimised by using a language conversion package for the most important programs. Neither is conversion training a major problem for staff already using an existing high-level language. There will be many parallels between one language and another.

5. The indications are also that when programming staff start to use a powerful general-purpose language, they tend to stay longer at the installation. They are more content, more interested in their jobs and no longer regard themselves as a mere adjunct to accounting. Conversion is a difficult time. And the most difficult time is overcoming the conservative attitudes of not only executives who can take the decision to guide the corporate body in one direction or another but also of programmers who fear change. They (the programmers) used to be innovators, but now, at a time most detrimental to the growth of language facilities to keep pace with hardware advances and user expectations, have opted for familiar things and perhaps mediocrity.

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CONFERENCES

A ONE-DAY seminar on electronic funds transfer at point of sale will be held on March 6 at the Cafe Royal, Regent Street, London. Organised by Retail Conferences, the seminar aims to bring managers in retail distribution up to date on the latest developments in this field and to provide a forum for discussion of the problems and benefits seen in the introduction of such systems in the UK. Topics to be covered include systems design, information systems, security and public relations. Details from Retail Conferences, 30 London Road, West Ham, Kent, Tel: Westerham 63188.

The fourth annual data entry management conference is to take place in Orlando, Florida from November 10-14. Papers are invited on all topics related to data entry and distributed processing, word processing and human machine interface. Details from Marilyn Bodek, Data Entry Management Association, PO Box 3231, Stamford, CT 06903.

The first two conferences planned for 1980 by Business Information Techniques are Advanced Word Processing, and The Electronic Manager. The first will take place on January 10-11 at the London Press Centre and the other January 21-25 at the Hotel Russell, London. The

seminar covering word processing will discuss the use of microprocessors and lasers in multiple copies, the concept of capturing incoming information on video fiche and interfacing the text with word processing, also the problems of data and word processing being contained within the same machine. The conference to take place later in the month will be exclusively about the behaviour of people coping with change within the office environment. Further information may be obtained from Business Information Techniques, 15 Devonshire Street, Kelgley, West Yorkshire, Tel: Kelgley 63436.

The Institute of Civil Engineers is holding an informal discussion on computer assisted estimating for the contractor on January 21. The seminar aims to discuss the reasons for choosing computer based systems for assisting the estimating process and explain why these systems have failed to be successful in the UK. Details from the Institute of Civil Engineers, Great George Street, London SW1. Tel: 01-222-7722.

A one-day conference has been organised by the Institute of Purchasing and Supply specifically to help the first and small users of computers and computer equipment. Information will be provided on the various systems used by other small organisations and advice will be given to new and existing computer users. The seminar will take place on January 23 at the Carlton Towers Hotel, Cadogan Place, London. Details from the IPS, IPS House, High Street, Ascot, Berks. Tel: 0893 23711.

The eighth international conference on computational linguistics is to take place in Tokyo from September 29 to October 4, 1980. Papers are invited for presentation at the conference, which will cover discourse, syntax, semantics and the history of linguistics. The deadline for abstracts is January 15, 1980, and they should be sent to the Programme Chairman, Professor D. Hays, 5048 Lake Shore Road, Haptburg, New York, 14075, USA.

A pioneer of the development of purpose designed and printed computer labels, Horace Klatzer, is to speak at the third Dolphin Labeling Luncheon arranged by Dolphin Labels of Brighton, on January 8, 1980. Details from Dolphin Computer Labels, New England House, New England Street, Brighton, Sussex. Tel: 0273 861361.

SOFTWARE FILE

Challenge to the security of CICS

THE recent release by the European Software Company of a system called Secure/CICS seems to suggest that security arrangements for IBM's Customer Information Control System are not all that they might be. The product aims to prevent the accidental or intentional alteration of information, and make easier the task of ensuring that access to sensitive information is restricted.

More RTL/2 compilers for Eclipse, Nova

TWO more RTL/2 compilers and run-time libraries have been announced by Software Sciences Ltd, for Data General Eclipse and Nova systems under RDFS. The company already markets one of the first RTL/2 compilers for micros using the Texas Instruments 980/10.

The RTL/2 projects have all been backed by the National Computing Centre's Software Products Scheme, which made a grant of £27,000 to support the new products. The Eclipse version of the compiler is available now to UK users, and the Nova version is scheduled for release in January 1980.

SIA offers Pascal service

PASCAL is now available under SIA's remote access computer service, based on CDC Cyber 175 and 6600 machines. SIA now offers the Pascal 6000 compiler, first developed at Zurich and enhanced at the University of Minnesota by Nicholas Wirth.

Clients are able to develop their own program via a terminal into the SIANET local access network. Full technical support and documentation is provided.

SIA says that Pascal has been found to require much less memory than any other high level language.

Interface for Datamanager

THE data dictionary system Datamanager is now able to run under four TP systems with the announcement of an IMS/DC interface from MSP. Datamanager is already available under CICS, Roscoe and Com-plete, as well as running online under several other systems.

Datamanager under IMS/DC is handled through a series of pre-formatted screens which are designed to simplify the entry of definitions and minimise errors, partly by reducing the typing involved.

Computdata changes COS/1 marketing strategy

COMPUTDATA Systems Inc of Westport, Connecticut, has changed the marketing strategy for its main IBM-Series 1 software product, the COS/1 operating system. Until now Computdata has tried to sell COS/1 as an alternative to IBM's own Series 1 operating systems. Now the firm will concentrate on selling the enhancements in COS/1 to IBM's own CPS. COS/1 is a development of CPS and involves less overhead than IBM's RPS. It comes with an Anal Cobol compiler.

Paul Matroni, boss of Computdata, told Computer Weekly that he had come to the conclu-

CICS makes such resources immediately available to many people at different terminal locations, and according to an ESC spokesman, the security provided by IBM for regulating access is "extremely rudimentary, so little as to be valueless."

ESC claims that Secure/CICS offers protection significantly more comprehensive than that available through existing CICS software. The product is designed to allow many different levels of protection to be defined. The installation can specify its own control elements which will supply a sophisticated level of control over who can access what, and from where, ensuring automatic approval or rejection of an attempt to access to system.

The features, says ESC, enable the protection of individual resources as well as controlling terminal activity.

Although the emphasis is on security, Secure/CICS also features basic elements of good housekeeping. These include 'remote control of terminals' which might have been left on by mistake, or which should only be used at certain times of day, and an automatic audit trail which records details of how data was accessed. Should a significant security violation occur, the security officer is alerted, and is able to reconfigure the security controls immediately, without any disruption to other users.

ESC admits that subversion of the security system would be possible, but not without detection, and as Secure/CICS resides in the operating system, it would take very specialised knowledge to achieve it. "Super-zapping" as the by-passing of security safeguards is called in the US, is recognised danger in computer abuse.

Secure/CICS is presented more as a tool to combat carelessness and unauthorised use of resources rather than the determined criminal, but the

area at which it is aimed points to the deficiencies of CICS as it stands.

Recognising its vulnerability, IBM is planning to improve security aspects in release 1.5 of CICS next year.

Circle Computer Consultants is also investigating an Online Software International product called Guardian, as yet unpriced in the UK.

The OS version of Secure has over 250 users in the US and Europe, and Secure/CICS has won 20 US users since its introduction two months ago. It usually costs £10,400 but has an introductory price of £6,720.

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Rank Xerox standardises on finance

RANK XEROX, the office equipment and photocopy supplier, is to standardise its fixed asset accounting throughout Europe, Australasia and Africa with a software package from Management Science America.

The package will be used for the usual range of fixed assets as well as the huge numbers of revenue-producing photocopyers which are rented out to customers.

In each of the 22 countries where it is to be installed the software will comply with national reporting requirements as well as those imposed by US regulations.

The MSA package was officially launched in the UK last September. It is available on IBM, Burroughs, Honeywell and other kit, and is used by over 200 organisations in the US, where it has been available since 1976.

Ten countries have say in future of online retrieval service

USERS from 10 European countries are to have a say in the future of the Lockheed Dialog online information retrieval service. The 16-member board will solicit views on the Dialog service from its 3,000 European customers and seek suggestions for additions to its databases.

Dialog holds over 100 databases of worldwide information, providing instant access to over 30 million references to material published over the last nine years on science, technology, the humanities and economics.

Many of the databases are kept up to date by European authorities such as the Institution of Electrical Engineers in Britain, Excerpta Medica in Holland and the Food and Agricultural Organisation in Italy.

Dialog's records are kept on two IBM 370s at Palo Alto, California. They can be accessed

from anywhere in the world through keyboard terminals linked to telephone lines.

Users are now able to place orders for the full text of reports to be sent to them. Such orders, made while online to the service, are immediately relayed to the appropriate supplier in Britain, West Germany or the US, who will in turn quickly despatch the complete copies required.

Hotreader

AN internal reader for VS1 systems allowing jobs to be submitted from within other jobs, has been released by Software Module Marketing of Sacramento, California. The firm says that the product, called Hotreader, offers a dependent job scheduling facility which will greatly reduce operator error.

UKS has Centronics 6000 Series Line Printers EX-STOCK

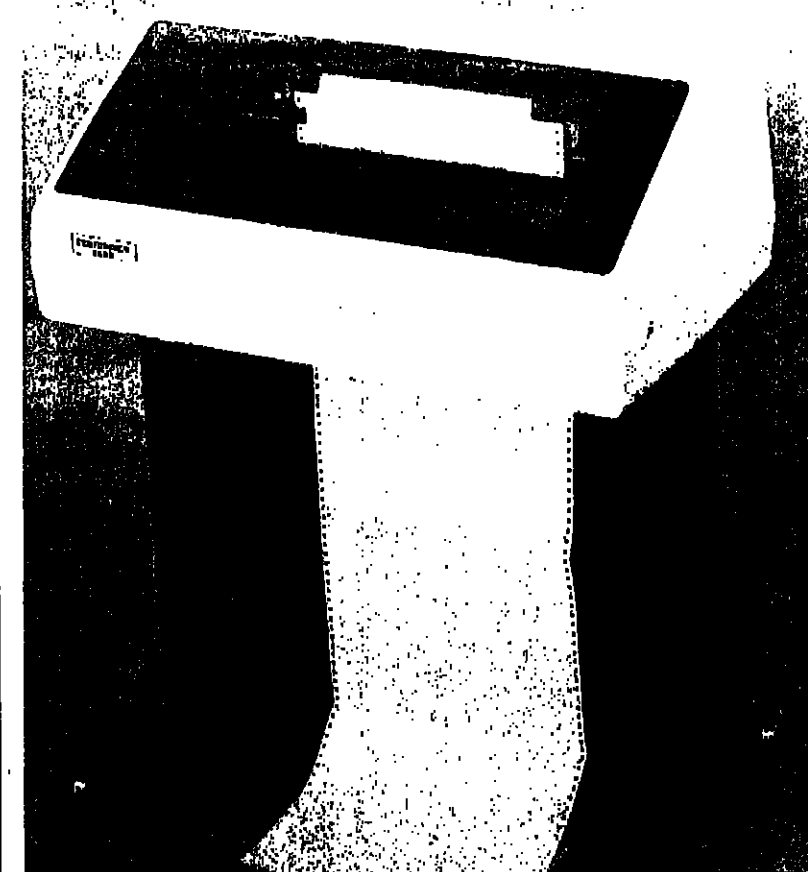
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| ■ Model 700 | £1099 |
| ■ Model 701 | £1160 |
| ■ Model 702 | £1403 |
| ■ Model 703 | £1658 |
| ■ Model 753 | £1736 |
| ■ Model 761 RO | £1371 |

For further information contact Stuart Allison at the address below:—

UKS Cable & Wireless UK Services Ltd
83 Blackfriars Road, London SE4 8AF. Tel: 01-4928 0261. Telex: 915463





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OP SPOT

Three-point plan to sicken staff

SALARY. training and career prospects — these are three ways in which the enlightened DP manager can provide incentives and so get the best out of his operations staff.

Bearing that in mind, the manner in which certain installations treat their operations staff never ceases to annoy and amaze me.

Consider the comments of one disillusioned operator. A former TOPS operations student, he writes:

"In the 18 months I have been at the installation I have had about 20 minutes' training on macros and about 50 minutes on our new data entry system."

He goes on: "Whenever my colleague and I ask for further training and courses we are told that none are relevant and that our chief operator has no time to train anyone."

It gets worse: "For the past six

or seven months we have been asking to spend a little time in data control to get some idea of where our work comes from and goes to.

"On each occasion the operations manager has replied, 'That's a good idea, leave it with me' and has then proceeded to do nothing about the request."

On career progression, he says, "If I stay at this site I can hope, at most, to rise to the dizzy heights of chief operator. And that's counting on one or two people falling under a bus or having some other fatal accident."

And finally, on the question of money: "We are currently in the process of salary negotiations and have been offered a really pitiful sum."

The operator hopes that his comments are noticed by people who reckon that most operators aren't interested in career progression.

Will the next decade see much more progress?

by Bernard Allen

HAPPY New Year. Happy new decade — we're in the Eighties, as if you didn't know.

This is the time to break out of our bad old ways, turn resolutions into realities, make actions do nothing about the request."

Of course, that seldom happens and it's not going to be any different just because we've moved into a new decade.

The Seventies came and brought us a whole new range of technology, but now they've gone and left the industry with many of its blind spots and prejudices.

You might think that's a bit cynical and pessimistic, and perhaps it is. But it's true of many of the problems facing operations staff today.

To show you what I mean, let's blow the dust and cobwebs away and look at the Computer

Weekly issue of January 1, 1970 — 10 years ago almost to the day.

There is no column for operations staff, but the career progression issue is being debated in the letters column.

Operator David Abbot commented, "The attitude towards operators is sickening. They are (treated as) unqualified, uneducated robots, with only average intelligence. They do a thankless task."

Abbot had worked at three sites and had come across a number of operators who had taught themselves programming with little encouragement from the management.

"Three in particular were notably good, on a par with or better than most junior programmers. No small achievement, when you consider they were

completely self-taught."

Abbot's letter had been prompted by comments made by a DP manager and former operator.

In the issue of December 11, 1969, the DP manager wrote, "What I fail to understand is why some operators should have such a blind and avid desire to become programmers."

"As a manager of a large installation it is my opinion that an experienced senior operator is of equal value to a programmer with two or more years' experience."

He pointed to the "very wrong assumption" that the natural career path leads "from operating to programming to systems work to management."

And so say all of us.

Career progression is still a problem. But at some of the more enlightened sites operators are now being encouraged to move into such areas as technical support, systems programming, and supervisory roles. TP networks provide another potential outlet for computer room staff.

Closely related to the career progression problem is the scant attention paid at many installations to operator courses and training. An operators' group or

union might help but, as we know all too well, there is no such body or organisation.

Operators, of course, still get paid less than programming staff. They still work shifts and receive an allowance which can only be described as inadequate.

So what's going to change over the next 10 years? Well, people who make it their business to predict what the future has in store point to changes in technology and tell us that fewer operators will be required.

We hear predictions about the effects of micros and TP networks, and know all about mass storage systems, fixed disc drives and laser printers. But who really knows?

New technology may well reduce the demand for operations staff but, hopefully, it will also make night work unnecessary — that would be great. The trend away from night work has already started in Germany and the Scandinavian countries.

Finally, I hope that people in the industry will come to realise that the term "operator" is outmoded, and that the role played by most operations staff is more aptly described by the word "technician."

Mini users have their problems, too

DON'T underestimate the task of people responsible for running the smaller system, the minicomputer.

The mini may not be as big and sophisticated as the mainframe, but it is still capable of giving headaches to the operator and manager alike.

This is the cry of Colin Walters, who is computer manager at Homeworthy Furniture in London.

He comments, "Previous articles have made it quite obvious that mainframe operating systems are much more complicated than my own, but what about a word for the mini user?"

"Surely it is the poor old office manager or company accountant, faced with a newly-installed machine, no experienced staff, who needs the most advice."

At Homeworthy Furniture there is a 128K NCR 8250 with four VDUs, a 300 lpm printer and four disc drives — two fixed and two removable.

It runs under IMOS, the interactive multiprogramming operating system, and is operated by Walters and a young female operator. When there is a lot of work on, they "borrow" some office staff to help in the running of the system.

"Some of them are very interested in it. My operator keeps an eye on them to see that they are all right on the system. They use IOCS, the interactive operator control system, which interfaces between the program and the operator and makes things a lot easier."

A former credit controller, he became computer manager soon after the system was installed. "I've always been interested in computers and when we got one I was glad to take the opportunity and become the manager of it."

Finding an operator for the system was his first big problem. He tried all the non-specialist staff agencies but was unable to find the right type of person. "In the end I trained someone for the job myself. And she's done very well," he says.

Walters belongs to a recently-formed NCR 8200 Series user group which meets in London to enable members to swap advice and experiences. An example of the sort of hint members are able to pick up at group meetings is given by Walters below.

The group's next meeting takes place on January 24, at Credit Control Insurance, 129 Regent Street, London. It starts at 18.00. Colin Walters can be contacted on 01-807 1040.

No need to tear your hair if system fails

"DO fellow NCR 8200 Series users know that they can generate the system files on the second fixed disc, if they have one, or even on 10's removable disc?" asks Colin Walters.

"This is done by changing the system parameter file in the SYSDISK utility, giving the replacement disc volume serial number and platter number in the rest of the system files."

"A back-up system disc together with the appropriate LOAD OS cassette, can be a great asset should your system go down."

"No tearing your hair out while waiting for replacement parts to arrive. Just load the spare LOAD OS cassette and use the rest of the system files."



Film explores the challenge of telecoms

A 25-MINUTE colour documentary which dramatises the evolution of and potential future developments in telecommunications has been produced by Standard Telephones and Cables.

Called *The Challenge of Choice*, the film uses scenes of Alexander Graham Bell inventing the telephone in the last century, and its present-day use in defence applications to underline the importance

of telecommunications technology to all.

STC hopes that its "soft-sell" approach will give the film a wider audience, and discussions have taken place with the Central Office of Information on overseas distribution.

Our picture shows actor David Ashford as Alexander Graham Bell.

Word processing software with Diablo 3000

A LITTLE sister of Diablo's Ranger 3200 small business system, called the Diablo 3000, has been launched in the UK by Business Computers (Systems) which holds exclusive distribution rights here from the US makers. Incorporating twin 8in floppy disc drives in the same housing as the screen, the Diablo 3000 has a word processing package of a sophistication unusual in small business systems.

The 3000's daisy-wheel printer is carried on a separate trolley, but everything else is inside the screen housing. The price of £8,950 includes all the usual

business applications packages, but word processing software costs an extra £250 a year. The larger Ranger 3200 is priced at £10,800.

Word processing features include page rollover, indented paragraphs, and automatic insertion of names and addresses in letters. Since there are few special function keys, many operations have to be carried out by pressing Control followed by a letter, which the operator has to remember.

Up to two more screens can be added to the basic system.

Diablo is owned by Xerox and these machines will be com-

peting against the Xerox 850 word processor. Business Computers (Systems) is the former bankrupt BCL reconstituted, now acting only as a distributor and systems house, having handed over the manufacture of the Molecular minicomputer to Allied Business Systems.

Fiche inquiries

AFTER trials which began 10 years ago (CW, December 4, 1969) the Post Office is to install microfiche readers in 280 directory inquiry centres for use by 4,500 directory operators. The scheme is expected to cost about £3 million.

'Privacy audit will not prevent misuse of data' says NCC study

AUDITING of firms' compliance with data protection laws can only prod the unenthusiastic into making an effort, rather than catch those deliberately misusing data. That is the main conclusion of a study on privacy auditing carried out by the National Computing Centre for the EEC (CW, January 25, 1979).

Five other privacy topics have also been investigated for the EEC by the NCC's counterparts in other member countries. The English version of all six reports is being edited by Hugh Pitcher of the NCC and is due for publication on February 1.

The topic that has proved most thorny is whether organisations ("legal persons") should have rights of privacy in addition to individuals, as they already do in some countries. This allows firms to force their competitors to divulge what they know about them. One-man businesses pose a particular difficulty.

The investigators found the problems so complicated that they did not attempt to recommend firmly what should be done, but simply reported on what a mess the issue is.

A similar lack of clear-cut solutions came out of some of the other four studies, which were: The quality and quantity of cross-border data flows, methods of working of data protection authorities, international economic aspects, and the individual's right of access. Practical problems loom large, and it is felt that implementation

of many privacy provisions would be difficult.

A British MP, John Butcher (Con, Coventry SW) hopes to introduce his own Data Protection Bill in the unlikely event of his winning the Private Members' ballot in mid-January. He is worried that international firms in the UK will encounter difficulties with their communications if the UK does not

go along with other countries' data controls. He is also concerned that overreaction to privacy worries will place the DP industry under an undue burden. The provision for privacy for legal persons in the Council of Europe draft privacy convention would cause "anarchy in business," he said. The Council, however, does not have power to make binding rules.

'Disabled often make better workers' BGS group told

"THE disabled, who are competing in the job market with the able-bodied, often prove better workers," said Tony Aston, of the RNIB, speaking at a meeting of the British Computer Society Committee for the Disabled at BCS headquarters in London.

"Intellectually they can be as good as the next, or better; they are motivated to acquire all the skills they need, to a high standard; and the equipment and aids available to them nowadays mean that many of them can compete on equal terms with anyone," said Aston.

The informal meeting, funded by ICL, had been arranged to give employers a chance of meeting members of the committee and discussing with them ways of taking on disabled employees. The employers' side was well represented and included, among many others, people from Plessey Management Services, ICL, IBM, BP, the Midland Bank and British Leyland subsidiary BL Systems.

IBM demonstrated its audio typing unit, which is suitable for use by blind people, and Teleson Systems its Optacon, a device which enables the blind to read ordinary print.

\$24 million US defence deal

THE Californian firm System Development Corp., which specialises in the supply of information processing systems, has won a contract worth \$24 million for the fourth generation advanced computer system. SDC is to provide two Cray-1

computers and support services for the US Air Force Weapons Laboratory at Kirtland, New Mexico.

The contract involves research on future weapons systems vital to air defence.

THE PERIPHERAL SUPPLIERS' ASSOCIATION & IPC ELECTRICAL-ELECTRONIC PRESS Present



West Centre London April 16 & 17 1980

Third year of the specialised exhibition for professional purchasers of computer peripherals, terminals and add-on units.

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- Conference Sessions — State-of-the-Art sessions to bring you up-to-date with latest developments in the micro field.

WEDNESDAY, 30 JANUARY

Chairman: Dr. Frank Taylor, Systems Technology Consultants

DEVELOPMENTS IN MICROTECHNOLOGY

Microcomputing into the 80's. Dr. Martin Healey, University College, Cardiff. A review of the microelectronics field with particular reference to the direction the market will take in the 80's.

The developing chip. Scott Dixon, Intel Corporation. The trend towards incorporating more elements, including memory, on the chip continues.

Bit-slice technology — An approach to bespoke microprocessors. Dr. Alan Clements, Teesside Polytechnic. The flexibility of bit-slice components enables machines with a variety of architecture to be constructed.

Memories for microsystems. David Parrott, Texas Instruments. The capacity of semiconductor memory is expanding to meet the future needs and new applications are being opened up by bubble memory.

PUTTING MICROS TO WORK

Vibration Monitoring. Ian Whitworth, Royal Military College of Science. Microprocessors are being used to monitor vibration fatigue on large metal structures.

Micros in toys. Richard Phillips, Texas Instruments. Growing use of microprocessors in toys poses interesting problems in systems design and cost control.

The application of microprocessors in measurement systems. Speaker from SIRA Institute to be confirmed.

Incorporating micros in OEM products. S. Sambell, Hugh Pughman Associates. The technical and practical considerations of incorporating micros in OEM products are examined.

THURSDAY, 31 JANUARY

Chairman: Dr. Martin Healey, University College, Cardiff.

SYSTEMS DESIGN AND SPECIFICATION

Specifying the system. Dr. Keith Baker, Sussex University.

A methodical approach to systems specification and design is the key to avoiding later problems.

Communicating with the outside world. A.A. Molinari, Data Translation Inc.

Interfacing the microsystem to the outside world is not always as straightforward as it could be.

Five years' experience of a modular system. Harrold Lindmark, Satcon AB.

Description of a microcomputer system based on 80 Eurocard modules, allowing a choice of processor, store type and I/O circuits.

Standards for microsystems. Speaker to be confirmed.

What technical standards have been agreed in the micro field? The speaker reviews what has been achieved.

SOFTWARE FOR MICROSYSTEMS

Micro software. John Smart, CAP Microsoft.

Microcomputer software is often limited in its scope. But it is improving. The current situation is examined.

Development aids. K. Smith, Electrical Research Association.

The aids which are available for developing microsystems are reviewed and the way in which they are used is examined.

Development software for microprocessor systems. Martin Whitbread, Leeds Polytechnic.

The main pre-requisites for development software outlined and the relative merits of PLM and PASCAL are assessed.

Databases on microsystems. Tony Stock, D.M. England and Partners.

Problems of implementing database applications on microcomputer systems are identified and solutions are described.

FRIDAY, 1 FEBRUARY

Chairman: Julian Allison, ACT Patent.

PERSONAL COMPUTING

Trends in personal computing. Robin Brindley, North London Polytechnic.

An examination of the directions which personal computing is taking, with reference to the U.S. scene.

How to choose a microcomputer system. Martin Collins, Applied Systems Techniques.

Identifying the criteria for selecting a microcomputer is the first step in a successful choice.

When next with the Pet? Richard Payson.

What is likely to be the next steps in the development of the Pet and what does the future hold for many thousands of UK users?

How to run a business on a microsystem. Speaker to be confirmed.

The speaker's experience in applying a micro to his business is described. Linking your micro to the videodata system. Peter Sommer.

The ability to provide local intelligence, in the form of a micro, adds a new dimension to videodata systems.

Microelectronics in schools — are we going in the wrong direction? John Severn — Nottingham Technology Centre.

The speaker argues that we are in danger of regarding micros just as an educational aid rather than tools to be used.

Personal computing — a user's view. Barry Bidder.

Getting into personal computers is not without its problems. The speaker looks at the current situation and asks whether things are improving.

Personal computing — a retailer's view. Derek Moon, Curry's.

What a major high street chain gets into the personal computer business. It's news. A director of Curry's gives his view of the market.

To MICROSYSTEMS'80 Room 814, Dorset House, Stamford Street, London SE1 9LU

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 - ☐ Registration ticket(s) for the Exhibition. State number required.

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PEOPLE and EVENTS

One of the top women in business

CHAIRMAN and founder of F International, Steve Shirley, was the first woman in computing to reach the finals of the Business Woman of the Year Award. The award is sponsored by The Times and Veuve Clicquot Champagne and at a presentation held in The Times boardroom Mrs Shirley received a silver replica of a wine tasting cup used by the founder of the Champagne company over 200 years ago and a bottle of special vintage Champagne.

The award, now in its seventh year, is an accolade to women who have reached the top in British business. Initially it was given to women who had reached success in industries which were traditionally male preserves, but with the increasing number of women in responsible positions there is no longer any surprise at finding them holding key roles in business management.



business management.

Steve Shirley formed F International in 1962 after graduating from London University and working for a period with I.C.T. now R.L. The company provides consultancy, analysis, programming and management advice to a regular clientele of central and local government, banks and other organisations.

One of the newest ideas to be taken up by F International is the concept of a husband and wife working together as a single work unit.

Gill Ringland to leave Inmos

GILL RINGLAND is leaving the NEB-backed semiconductor company, Inmos, where she was head of software, to set up a European software development facility for Modcomp.

She moves to the company's UK base at Wokingham at the end of this year to become software development manager. Her work at Inmos will now be split between Joe Norman, in charge of project control, and Colin Whitby-Stevens of computer aided design.

"Inmos is in good shape now," she said. "It has a good team. It should be—I recruited them!"

John Gilson has become sales manager for Scotland with Johnson Control System, based at Cumbernauld. He has been with the company since 1974 and was previously sales manager of its London branch.

Rod Atwood has become marketing director for the Northern European semiconductor division of Texas Instruments.

David Palmer has been appointed financial accountant for Darley Business Forms. He was previously financial accountant for Crittall Windows.

Helen Wilkinson has been promoted to sales executive with Prime Computer. She has joined the company's Maidenhead office where she will work for the government branch with particular reference to the Ministry of Defence. She came from Prime International where she was support consultant for the company's subsidiaries in Europe, the Middle East and Africa.

Mike Tartellin has been appointed to head a new department for project management at Menzies Communications Systems. He formerly worked for British Airways on the technical support side of their communications systems.

Carl Laut, development director at Sherwood Computer Centre has taken on the additional board responsibility for administration within the group. Richard Guy, director in charge of batch computer services for insurance companies also becomes company secretary for all group companies with the exception of Sherwood Insurance Administered Services (SIAS). Keith Mara is now company secretary for SIAS.

Stewart Pearson has joined System Industries (Europe) as a senior field engineer from Cray Research where he was an associate engineer. Peter Packham has also been appointed as a senior research engineer. He returns from secondment in the US where he was a training officer.

Peter Sturgess has been appointed manager of ASI, the video training company, replacing John Kirkham who has moved to the American parent company as senior vice-president. Sturgess was previously program products manager with Tesco. Charles Gould, formerly a technical consultant with ASI, has become product development manager.

Richard Foster, formerly a microcomputer consultant with Bleasdale Computer Systems, has joined John Hoskyns as a senior consultant with the new consultancy division.

Bob McLean has become head of the BBC's computer services department, the post he has occupied recently in an acting capacity. He joined the BBC in 1970 as a shift leader in the computer services department, and was appointed computer operations manager before taking charge of the department.

Geoff Emmett and Peter Clark have both become sales executives with Data Design Techniques.

DIARY

JANUARY 10
IBM CUA management group. Mount Royal Hotel, London. Tel: 01-581 1043.
JANUARY 16-17
IBM CUA Series I group. De Vere Hotel, Coventry. Tel: 01-551 1043.
IBM CUA Local Authorities group. County Hall, Cwmbran. Tel: 01-551 1043.
JANUARY 24-25
IBM CUA programming group. Holiday Inn, Liverpool. Tel: 01-551 1043.
FEBRUARY 4
Meeting. DCS Fortran specialist group. Heriot-Watt University, Edinburgh. 10.45. Tel: 0533 854485 ext 105.



Gill Ringland

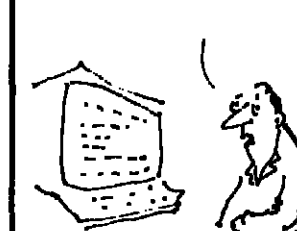
Changes for 1980 at Kodak

TO meet the new decade, Kodak has announced internal changes. The company has regrouped two major areas, customer operations and manufacturing operations. Roger Leeks who is director and marketing manager will be responsible for customer operations, the group which will bring together marketing groups, the company's colour processing division at Hemel Hempstead and the three Kodak regional distribution centres at Hemel Hempstead, Manchester and Dublin.

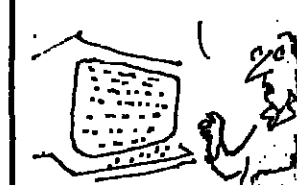
The manufacturing operations group embraces all concerned with manufacturing Kodak sensitised goods and chemicals as well as the company's box and printing department, group supplies and the distribution division. Denis Goodchild will be responsible for the group. He is director and sensitised goods division manager.

Divanore File

GOOD HEAVENS...



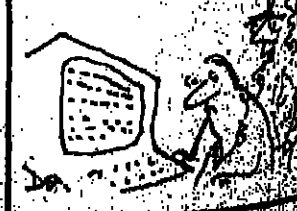
... THIS PROGRAMME ALL CAPTIONS AND NO PICTURES!



RELAX, SON - THE CHRISTMAS BREAKS OVER...



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COMPANY NEWS

Fast-growing Digico sets up two wholly owned subsidiaries

THE advent of low-cost components and the accelerating value of mature software has transformed Britain's indigenous minicomputer manufacturers, none more so than Digico.

So small five years ago that few people gave it much chance of surviving into the 1980s, Digico's business is now growing so fast that the company is reorganising and forming two wholly owned subsidiaries.

The sales and manufacturing company continues, and the two new subsidiaries are Digico Maintenance Ltd for hardware support, and Digico Management Services for software support. For the current financial year the target for the sales and manufacturing company is £4 million turnover, with a total of £5 million for the group. This may not sound much when compared with the industry giants like DEC and Data General, but is very creditable when one recalls that it took Digico nearly 10 years to get up to £1 million turnover, and it stuck around that figure for about three years before moving

ahead in 1977. The company has switched its financial year-end from March to September.

The current year's manufacturing and sales business is planned to divide into three. Commercial applications, mainly through distributors, are planned to contribute £2 million of business; scientific, process control and industrial applications should bring in £1 million, with another £1 million coming from overseas.

Digico's minicomputers are marketed in a bewildering array of second-line countries. In the Far East there are distributors in Thailand and Hong Kong, and in the Middle East, in Kuwait and Saudi Arabia. There are also distributors in India and South Africa, while in Europe, Digico computers are marketed in two EEC countries, Eire and Denmark, as well as Norway, Switzerland and Greece.

The company is manufacturing its four-model line of minis at a rate of about 20 a month, and also builds the Digico Regent display, memory boards and interfaces. The new white hope is the

powerful M28 which addresses a formidable maximum main memory of 16 megabytes. It has a processor cycle of 500 nanoseconds, 1.8 times as fast as that of the next model down, the MTS; however it is claimed to be four times as fast in applications involving a large number of disc accesses.

An M28 with 258K-words of main memory, a 300 megabyte and a 40 megabyte disc drive, a 800 lpm printer, tape drive and four terminals costs about £70,000. Without the small disc unit and tape drive the price falls to about £55,000.

Programming is either in a compiled Basic or in assembler, and there is also Video, which is a report generator similar to Filetab.

There is a lot more to supporting other programming languages on a machine than simply writing a compiler; even so, it might be worth Digico's while to commission students at further education establishments to write further compilers. GEC's Cobol compiler is being developed at North Staffordshire Polytechnic.

COMMUNICATIONS NEWS

FCC allows Western Union to link directly to UK Post Office

THE Federal Communications Commission which regulates telecommunications in the US has made a number of deregulatory moves on the international front, opening up increased competition.

AT&T has been allowed to drop its prohibition of non-voice use of international telephone lines. This means it is now permitted to use an acoustic coupler which has been difficult to prevent, so there had been widespread rule-breaking.

Western Union has been allowed to link directly to foreign PTTS such as the UK Post Office, instead of being required to link to an international carrier in the US.

The international record carriers themselves such as Western Union International, which is an entirely separate company, are no longer limited to operating through five US cities, but can now set up shop in 21 additional cities. They are also permitted to carry voice traffic for the first time.

Consortium Communications has been operating a store and forward message service for two years. This has been classified as

a data processing service and as such was not subject to regulation. It has now been reclassified as a communications service and while it would not previously have been allowed to operate at all under this heading, it has now been given ten days to submit a tariff to the FCC.

Following this decision two more companies, Southern Pacific Communications and International Relay Inc, have applied to operate a service. International Relay wants to link to the UK.

The changes have come because the Federal Communications Commission has decided that non-voice business was generating excessive returns on capital. It chose to allow increased competition in preference to imposing price cuts, and in recognition of the growth of computer communications.

Software written at University College London was used to handle the facsimile transmission. Bolt Beranek and Newman of Cambridge, Massachusetts, wrote the speech conferencing software which fed the speech signals into the network.

Xerox's Ethernet to be offered as a product

ETHERNET, Xerox's high-bandwidth network for internal office communications, is to be offered as a product from autumn 1980 after several years of experimental use in laboratories. The first device will be an upgraded version of the 850 screen word processor, called the 860.

Ethernet was devised at the Xerox Palo Alto Research Centre and has been in use there and

at other sites including President Carter's office (CW, November 16, 1978). It runs typically at five megabits per second and is noted for the ease with which a range of devices can be attached.

The 860 has the same screen and keyboard as the 850 but a different controller with extra software and a choice of floppy or hard discs. It is intended to broaden the functions of the machine outside word processing.

Sharing space on satellite channels

AN international experiment has shown the possibility of many small ground stations contending for shared space on satellite communication channels. This arrangement promises better use of satellite bandwidth, which will be required if proposed rooftop systems are to see widespread service.

In the experiment a link established between four ground stations in the US, the UK and Sweden carried voice, data and facsimile traffic at mixed transmission rates over a single 84,000 bit per second channel on Satnet, the US research satellite packet network.

The set-up was demonstrated at the National Telecommunications conference in Washington DC. Status information from the Satnet monitoring and control centre in Cambridge, Massachusetts, was displayed while the three types of traffic were generated.

Software written at University College London was used to handle the facsimile transmission. Bolt Beranek and Newman of Cambridge, Massachusetts, wrote the speech conferencing software which fed the speech signals into the network.

Continuing his survey of British computer companies TIM PALMER looks at the progress at Digico and GEC. In earlier issues he dealt with Ferranti (CW, November 15, 1979) and Computer Technology (CW, December 13, 1979).

GEC Computers turns up trumps

AFTER many years in the doldrums, GEC Computers is at last beginning to reach for the sky, and will report a turnover exceeding £20 million in the year to April 1980, up from about £12 million the previous year.

IBM France raises £13m loan

IBM FRANCE has followed its parent company into the money market to raise a loan. The company wants the money for expansion of its French manufacturing facilities and to finance leases.

It is the first time since 1972 that IBM France has issued any debt, and the first time that the company has gone to the European money market and raised a loan not guaranteed by the parent company.

The borrowing is a five-year bond for £13,000,000, issued at 9 1/2% and bearing interest of 11 1/2%.

In the autumn, IBM raised loans totalling \$1,600 million on Wall Street in the biggest corporate bond offer yet made in the US (CW, October 11).

Dealers sue Philips for \$20m

PHILIPS, which closed down its computer marketing operations in the US last year, now faces a \$20 million law suit brought by 13 former dealers who marketed the small business computers.

The dealers charge Philips with breach of contract, saying agreements, some running through to 1982, were suddenly cancelled.

Philips withdrew its computers, which are mainly made in Germany, from the US market last year, leaving Perlec with a contract to provide support and maintenance to users who had got their machines from Philips' direct sales operations. Dealers arranged support for the machines they sold (CW, November 23, 1979).

In an attempt to get back into the US market, Philips sought to buy up to 45% of Perlec, but its bid was trumped by Triumph-Adler of West Germany, which came out of the battle the victor with full control of the California peripherals manufacturer (November 29, 1979).

Memorex fourth quarter gloom

A MONTH after calling off its merger talks with Amdahl, Memorex has announced that stockholders should not expect too much out of its fourth quarter. Last year the company had net profits of \$12.4 million for the October-December quarter, and in the third quarter of 1979 it reported a net profit of \$7.1 million, but chairman and chief executive Robert Wilson warned that fourth quarter profits would be "less than half" of this.

COMMENT

FORECASTERS seldom get their long-term predictions right, simply because it is impossible to put together a single scenario which takes account of all the random unexpected events which may or may not happen. Any economist able to say with confidence in 1959 that the world of the 1970s would be dominated by a cartel of all producing countries, would have had to be a clairvoyant as well.

The best one can say is that when we look back in 1989, we will almost certainly include our own era in the list of the totally unforeseen factors among the dominant influences on the economic climate of the 1980s. Nevertheless it is reasonable to suppose that the so-called information revolution will have a significant impact on business and commerce, even if the predicted improvements in office efficiency fail to materialise before the last year or two of the decade. So to say, all the mistakes and disasters which beset computer projects in the 1960s and early 1970s look like being repeated in the office environment.

Several of the high flying pioneers of the semiconductor revolution are likely to come to grief in the 1980s because of their dependence on an ever-increasing demand for the particular product lines they produce. Equally there will be amazing success stories on the scale of companies like Digital Equipment, Data General and Wang among the embryonic builders of personal computers — and specialist devices too.

For the UK computer industry the most fervent wish must be for a growing awareness among investors that high technology demands high and continuing investment, and that it is worth sacrificing a little for the long term for the money tree.

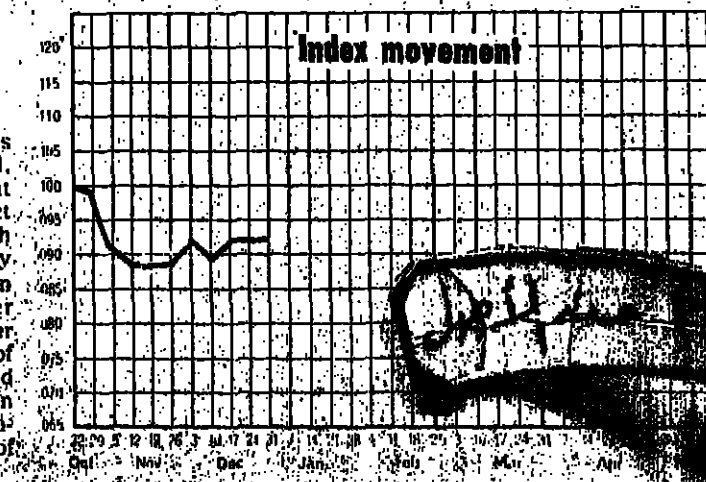
Thousands of American investors, both individual and institutional, have over the years been delighted at the progress of DEC and Data General, and at the performance of their stock. Many in the UK must think that fact was a cruel joke, for the fact was that they cannot nurture comparable companies.

Yet how many of those who mourn realise that DEC and Data General have never paid a dividend?

CW SHARES TABLE

Date 27/12/79		Index 92.30		Change +0.08	
Price	London Stock Exchange	Price	Change	1979	Share
High	Low	High	Low	High	Low
247	150	Applied Comp Inst	240	-7	24%
72	38	Bombardier	47	-1	2%
130 1/2	127 1/2	Burroughs	127 1/2	-1	3%
87	81	Canada	81	-1	1%
128	95	CompuLink	117	-1	1%
387	320	De La Rue	345	-10	3%
129	80	EG	130	-2	2%
300	250	Elm	250	-2	1%
147	81	Emulex	81	-2	1%
182	124	Ferranti	124	-2	1%
430	320	General	405	-25	6%
428	317	GEC	352	-6	7%
181	130	Honeywell	130	-1	1%
184	120 1/2	IBM	120 1/2	-1 1/2	30%
101	80	Intertec	80	-1	1%
216	160	Kalmanco	160	-1	1%
261	146	Kodak	146	-1	1%
300	200	Leeds	200	-1	1%
300	200	Memorex	200	-2	4%
127	100	Perlec	100	-1	1%
1128	100	Philips	1128	-12	9%
320	280	Philips Lamp	280	-2	4%
121	100	Perlec	100	-1	1%
264	180 1/2	Regal Electronics	180 1/2	-24	8%
174	127 1/2	Rockwell	127 1/2	-1 1/2	4%
1204	1247	Schmiedinger	1247	-11 1/2	7%
1286	1286	Siemens	1286	-11 1/2	7%
1274	118 1/2	TRW	118 1/2	-1 1/2	7%
144 1/2	127 1/2	Unisys	127 1/2	-1 1/2	7%

The table shows the closing prices in London on 24/12/79 and New York on 26/12/79. The share index is based on the price of the UK companies in the table.



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MICRO NEWS



Petsoft's Gold Cassette

LONDON accountant Oliver Bulmer receives the Gold Cassette presented to him for Making List, a Pet-based program sold by Petsoft. Making the presentation is Jessica, wife of Petsoft founder, Julian

Allison. It marked the 50,000th cassette sold by the company which, following export and licensing agreements in Europe and Australia, hopes to attain the 100,000 mark by Easter.

Commodore in bid to lead business market

by Martin Banks

THE news that Commodore Systems is to introduce not only 8-inch Winchester discs for the Pet microcomputer, but also an upgraded version of the system incorporating a 12-inch, 80 column integer memory (CW, December 20, 1979), indicates the trend the industry is following, and poses an interesting problem for other manufacturers and distributors.

For in this country at least, the Pet has become something of a standard system, whether you like it or loathe it. From small beginnings with the original 8K-byte computer — disparagingly referred to as a toy by many — it has grown into the basis of many a small business system out in the field.

The addition of hard discs, large screen display and larger

memory should serve only to extend this trend, which is certainly the way that Kit Spencer, general manager of Commodore Systems in the UK, feels the market is rapidly moving.

Claiming 50% of the UK market for microcomputer systems, he sees 1980 as a year of consolidation in the business market for Commodore. He points to one trend in the company's sales in particular as a pointer to the way he sees the future. "We are shipping something like 1,200 Pet a month," he said, "and at least 50% of those are 32K-byte systems now." In addition the two versions of the company's printer, and its dual drive floppy disc system, all of which have been in short supply since their introduction earlier this year, are now being shipped at a rate of 800 units a month.

Spencer sees the opportunity for Commodore, because of this market dominance, to set the standards that other manufacturers and suppliers become obliged to adhere to. His tongue he draws analogies between Commodore and the position of IBM in the mainframe market. The only fly in this ointment is the fact that the company does not enjoy the dominance it has here in its own domestic market — the US.

There, Tandy leads the field with its TRS80 system, and with the new Version II aimed directly at the small business market will push Commodore hard. Apple also has at least as much market share in the US as Commodore.

The one possible advantage Commodore does have is that, having started in the business early, and having established a line of predominantly directly compatible systems, it is getting ahead in a major area of the marketplace, producing the essential software that makes the hardware a system.

It is an area where the company's dominance in the UK market, and the inherent software skills in the UK, can be used to advantage.

Software products manager Mike Whitehead, a Canadian, sees a considerable opportunity for the company to use these British skills to establish the "standard" small business microcomputer system.

"The installed base we already have here means that there are many good people writing programs for the Pet," he said, "so we can take the best of these and market them worldwide as Commodore products, paying the writers a royalty. That way everyone is happy." This does not mean that Commodore markets every good program it comes across, however.

"We can't support everything," Whitehead said, "so we have decided to go for what I call the 'beans' market, just selling software that meets 80% of most users' applications needs."

Given the way the market is moving, Whitehead sees business software as primarily fulfilling this goal. It already has

Wordpro, a word processing package, CBIS, a business information package, and the CSlot stock control package available.

Microsystems 80 at the Wembley Conference Centre in London, to be held at the end of January, should see three further introductions.

These will include a revised version of the Wordpro package, called Wordpro 3, designed to run specifically on the 32K-byte Pet, a £150 disc based payroll package, and a new suite of standard accounting programs, costing £650, that will be able to handle 650 live accounts on sales and purchase ledgers, and 450 accounts on a nominal ledger.

All this software will be available only on floppy disc, a medium that is rapidly gaining dominance in the company's software sales. According to

Quote of the year

—so far

MIKE STERLAND, managing director of Personal Computers: "In 1980, I'm going to be the bad guy."

Whitehead, disc-based software already accounts for some 60% of the sales value of his operation, and the figure is rising.

Longer term, however, Commodore would seem to have several plans up its sleeve. The company's annual report suggests that 1980 could see the introduction of a "next generation" computer system, plus the addition to the Pet system of speech synthesis and recognition systems.

Its subsidiary company, semiconductor manufacturer MOS Technology, will also be making introductions, including a new 4-bit CMOS microprocessor aimed primarily at Commodore's original market of consumer products, and a 64K ROM.

This latter part could well lead to one other development of the Pet in the area of dedicated systems. The 64K ROM would hold 8K-bytes of program, sufficient for example for the Wordpro package.

National Micro Centre opens in London

JUST a little later than planned, the National Microprocessor and Electronics Centre was opened by Industry Minister Lord Trenchard at the end of last year.

It is in the new World Trade Centre, next to the Tower of London, and the aim of the sponsors is to establish it as the country's prime showroom of electronics technology and applications.

First announced earlier this year, when there was some suggestion that the Department of Industry would put money into the venture, it has finally appeared as a company owned by the two people who had the original idea, with a minority stake taken by the ICFC.

The two people are businessman Chris Roberts, and Jeremy Prosser, managing director of Prosser Scientific Instruments, a company that is heavily involved in applying advanced microelectronics to systems.

The ICFC has 20% of the company running the centre, and has also put in loan capital to get it off the ground.

Open to the public during normal business hours, five days a week, the Centre is intended by Prosser to become the major showroom of microelectronic application expertise. In particular, he hopes that it will become a centre for the small entrepreneurial British companies that are springing up.

"The Centre is really for window shopping, not necessarily for direct selling of products," Prosser said. "We just hope to put potential customers and suppliers together."

The Centre will concentrate mainly on UK manufacturers where possible, though the main criterion for entry is that the products are available and supported in the UK.

Small exhibition stands are available at an annual rental of £1,750, which also allows the exhibitor access to the World Trade Centre's facilities.

PRODUCT NOTES

Editing facilities on minidisc recorder

THE latest addition to Extel's range of minidisc recorders incorporates editing facilities which enhance the device's capabilities in business systems and data logging applications.

Known as the Extel 951EX Minidisc, the recorder is an RS 232C compatible device incorporating a Shugart floppy disc drive and is capable of storing

over 200,000 characters per disc. In addition to the full add, delete and replace editing of file contents offered by the previous 951 model, the 951EX includes a "global search" command, "freespace indication" and "enhanced delete file" functions, "goto" and "goto and return" commands, "string search" capability for up to 15 characters

and a "control F" command. The "global search" feature enables a full disc search for a character string of up to 15 characters to be carried out using the "Control Q" command after each readout.

"Free space indication" gives a readout of the numerical size of the free space after every disc directory readout. With the "enhanced delete file" function, on deleting a file, that file data is replaced with NUL characters.

The "goto" and "goto and return" feature enables users to insert multiple pages of data within an existing file and with the "string search" feature this is an easy way of accessing specific file lines for insertion or deletion.

The "control F" command allows the user to insert or delete characters or words without having to remember how many characters were in the original word.

The 951EX incorporates internal microprocessor-based software stored in resident memory and a self-initialising facility eliminating the need for preformatting of the discs. It costs £1,281 plus VAT.

The Exchange Telegraph Co Ltd (CW), Engineering Division, 73-75 Scrutton Street, London, EC2A 4PR. Tel: 01-739 2441.

Desk-side shredder

OFREX is offering its low cost Fordigraph TT80 desk side shredder (pictured right) for large organisations who need decentralised shredding. The TT80 is finished in orange or stone, measures 206 x 368 x 346 mm and weighs 15.45 kilos.

Ofrex Ltd (CW), Stephen Street, London, W1A 1EA. Tel: 01-638 3886.

Magnetic tape

WABASH has launched G-Tape in the UK which is said to be permanently lubricated, comes with a 25-year warranty and can be used on both high- and low-speed decks.

G-Tape has an oxide coating of 360 micro inches which enables it to run on both 556 and 800 bpi transports as well as the higher output 6,250 and 1,600 bpi transports.

G-Tape comes packed in oxygen- and moisture-resistant polyester air-tight bags made from Melinex. The bag is laminated on the inside with a layer of protective polythene and "metalised" on the outside with a layer of shining aluminium.

Wabash Tape (UK) Ltd (CW), Crown Road, Cold Norton, CM3 6JF. Tel: 0821 859181.

Micro system

OLIVETTI has introduced its desktop computer system called the Olivetti IGS 80 (interactive graphic system) which is based on the P 6060 personal minicomputer. The system is intended for any application involving graphical output and offers a diverse range of software.

Software includes a three dimensional projection system, a two-dimensional interactive package for mechanical, electrical and general systems design (using predefined elements) and a range of mathematical and statistical routines. Self-programming facilities are also available.

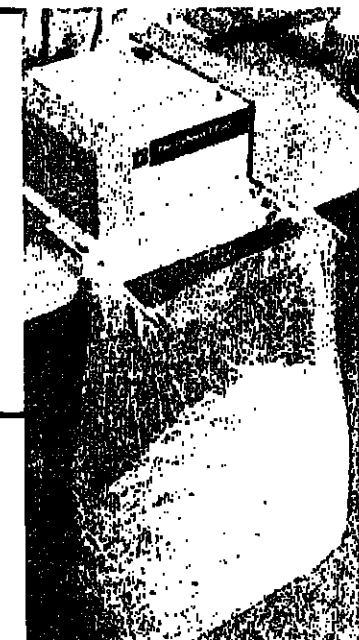
British Olivetti Ltd (CW), 30 Berkeley Square, London, W1X 6AH.

Modem

FROM Nilton comes its UK-made short haul modem for use on leased telephone lines. It is called the 1625 and has been granted Post Office approval. The modem provides a choice of either a 2,400 or 4,800 bits per second channel that is selectable by means of a board-mounted dip switch.

The 1625 can be used as a stand alone item or in a standard 19-inch rack for systems configurations.

Nilton Communication (CW), Fieldings Road, Cheshunt, EN8 8TL. Tel: Wattham Cross 33555.



Solid-state no-break power systems

A RANGE of Processgard solid-state frequency converters, mains stabilising and no-break power systems has been introduced by MPL Computer Power Systems.

Processgard is available in capacities of between 2.5 and 37.5 kilowatts with three phase and single phase versions available, says MPL.

An MPL Processgard no-break power system combines a battery charger, battery bank, solid-state inverter and by-pass facility. The battery charger converts AC power to DC.

Under normal conditions the DC power float charges the battery and simultaneously provides power for the inverter, says MPL. On serious distortion and/or loss of input AC mains, the inverter would continue to supply the critical load with uninterrupted AC power by drawing its energy from the

battery bank, the manufacturer added.

MPL claims that the battery bank is always connected to the inverter as well as the battery charger and that there is no switchover time upon loss or restoration of mains power to the charger.

AC output frequency from the power system is phase locked to the AC input under normal conditions.

When there is input AC, the output frequency will automatically determined by an internal oscillator, added MPL.

In the event of a component failure within the power system, a by-pass facility would be activated and the critical load would automatically transfer to the input AC mains.

A solid-state by-pass switch was offered as an optional extra for transfer without interruption of power to critical loads, MPL concluded.

MPL Computer Power Systems (CW), Belvedere Works, Bliton Way, Hayes, UB3 3ND. Tel: 01-848 9871.

SYSTEM Industries (Europe) has announced a Discache option on its 9400 systems for the entire Digital Equipment range, including Vax 11/780, which could enable a user to triple throughput under the DEC operating systems RSX/11M or RSTS/E.

The multi-port feature of the 9400 is used by the option to enable a separate slave processor to act as the cache buffer during data transfers.

Whenever the main processor attempts to access the database, the 9400 controller will automatically check the slave processor to see if the file is available within the cache, says System Industries.

System Industries (Europe) Ltd (CW), System House, Guildford Road, Woking, GU24 7QQ. Tel: Woking (0492) 5077.

BROCHURES

Unconfusing jargon

CONFUSED by computer jargon? Then in an effort to cut through the verbiage, Splice and Pegler Management Consultants has produced a brochure which attempts to explain terminology to first-time users.

The brochure admits that some of the terms mean different things to different people. However, on types of computer, it classes these by price.

About half the booklet is devoted to minicomputers and it also advises on the steps to be taken in installing a system and which responsibilities should be taken by whom.

Splice and Pegler Management Consultants (CW), 3 Bavis Marks, London, EC3A 7HL. Tel: 01-283 2683.

Microsystem

MICROSYSTEM Services has published a brochure on ultra-violet PROM erasers. In addition to providing hints and tips on PROM erasing techniques, the brochure presents the specifications for the Model 15 and Model 100 erasers.

These low-cost table-top units can erase up to 1 EPROM (Model 15) or 104 EPROMs (Model 100). Erasure is achieved by subjecting the EPROMs to ultra-violet radiation for a pre-determined period of time.

Microsystem Services (CW), 11 Duke Street, High Wycombe, HP13 6EE. Tel: 0494 41661.

Codex Corp

CODEx has available a brochure on its CDX-68 intelligent terminal products. It features detailed information on hardware, software and packaging in the CDX-68 product line, including a variety of keyboards, processors, memory systems, process control modules, peripheral devices, communications interfaces and software operating environments.

Codex Corp (CW), 20 Cabot Boulevard, Mansfield, Massachusetts, 02048, USA. Tel: 010-617 364 2000.

Data Dynamics

DATA Dynamics has published a leaflet on its 21p KDP computer terminal. The KDP comprises a 30-chips dot matrix printer, a keyboard with a 12-key editing cluster and a screen. The unit can be mounted on a desk top or on an optional stand.

Data Dynamics (CW), Data House, Springfield Road, Hayes, Middlesex. Tel: 01-848 8781.

Q-Pac Services

Q-PAC has produced a brochure describing its payroll, personnel and labour costing system. The package is of interest to all DP, personnel, accountancy and payroll managers.

Q-Pac Services Ltd (CW), 62 King Street, Maidenhead, SL6 1EQ. Tel: 0628 71824.

Automatic copy reading lectern boosts keyboard productivity

POWER Equipment has launched an office aid called the Easy-Reader which is described as an automatic copy reading lectern designed to increase the productivity of secretaries, typists, telex operators and all other keyboard operators.

The idea behind the device came from the fact that typists and telex operators spent a lot of time searching for their place in what they were copying.

Easy-Reader can be operated by inserting the copy or manuscript page behind the cursor and pressing the two-way foot pedal. Pages are driven up and down behind an illuminated and transparent cursor by electrically-driven rubber-coated rollers, says Power Equipment. The cursor also magnifies the text by a factor of two.

The Easy-Reader is finished in grey/beige and

comes complete with a baseplate and adjustable arm which allows the operators to swing the unit to any angle through 360° and set the height at the best level for the user.

The baseplate is designed so that the Easy-Reader can be used free-standing beside or behind any typewriter, telex machine or video terminal. An acrylic lid on the top of the unit can also act as a paper rest, says Power Equipment.

Documents up to 330 mm wide can be fed through the Easy-Reader and the reading height can be adjusted to anywhere between 230 and 380 mm.

The Power Equipment Co Ltd (CW), Kingsbury Works, Kingsbury Road, London NW9 6UJ. Tel: 01-283 0033.

Dielectric paper for Honeywell PPS

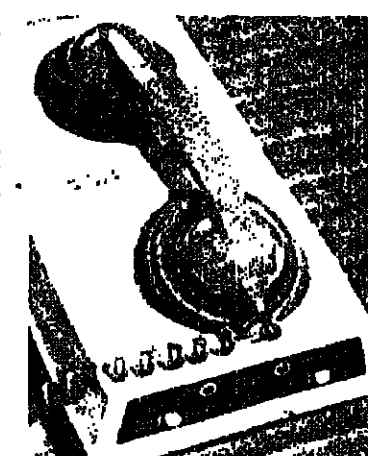
DIELECTRIC paper, approved for use with the Honeywell page printing system (PPS) is now available from Nashua.

The printing paper is capable of accepting the 18,000-lpm output generated by the Honeywell system. Called HP-1000, the product follows over a year's research by Nashua.

HP-1000 is a conductive base paper coated with a thin layer of dielectric material. The paper accepts charged images formed by the PPS, which are permanently developed by positive liquid toner to produce output in a variety of fonts and colours. HP-1000 is roll-fed through the PPS and printed, cut, collated and stacked in a single pass at a rate of up to 600 pages per minute.

The paper is available in 8.5- and 11-inch widths in rolls of 3,800 feet. The 8.5 inch wide paper is packed 45 rolls per pallet with an approximate weight of 1,740 lbs. The 11 inch wide paper comes 36 rolls per pallet.

Nashua Corp (CW), Office Products Division, 44 Franklin Street, Nashua, New Hampshire, 03061, US. Tel: (0101-800) 258 1926.



Model A211 acoustic coupler.

Acoustic coupler

PERIPHERAL Hardware has added the Anderson Jacobson acoustic coupler, Model A211, to its range.

Designed to meet CCITT requirements, the A211 is available with universal rubber cups which will adjust to accommodate most telephone handsets.

The A211 incorporates a crystal-controlled carrier detector and discriminator circuits which allow signals that are clean but weak to be used, claims Peripheral Hardware.

Peripheral Hardware Ltd (CW), Armfield Close, West Molesey, Surrey. Tel: 01-941 4808.

Floppy disc controller on a chip for IBM 3740s or 34s

NEC Electronics (Europe) has introduced a floppy disc controller chip which supports either IBM 3740 single-density format or IBM System 34 double-density format including double-sided recording.

The µPD785 contains all the circuitry and control functions for interfacing a processor to four floppy disc drives. The control signals are intended to simplify the design of external phase locked loop and write precompensation circuitry, says the company.

Programmable data record lengths are 128, 256, 512 or 1,024 bytes per sector and a multi-sector and multi-track transfer capability has been built in.

NEC Electronics (Europe) Ltd (CW), 43 Civic Square, Metherell, M1 1TH. Tel: 0688 68121.

Plotter interface for H-P 3000

VERSATEC has extended the range of general purpose computer systems able to run its software with an interface that

could link in Hewlett-Packard 3000 Series 1, II and III computers. The interface, carried in its own rack-mounted chassis, carries line printer emulation circuitry, independent power supply and cabling.

Electrical and mechanical specifications are compatible with the standard Hewlett-Packard input/output structure, says Versatec, which adds that it supplies the hardware connection.

The interface uses the standard Hewlett-Packard Sub-type 2 line printer driver for printing and plotting, and Versatec says that no systems modifications were necessary.

A software extender included with the interface provides for testing of all printer-plotter and interface functions and is supplied on time track 1,500 or 600 bpi magnetic tape.

The Versatec Ltd (CW), 27-25 London Road, Newbury, Berkshire. Tel: 0435 42421.

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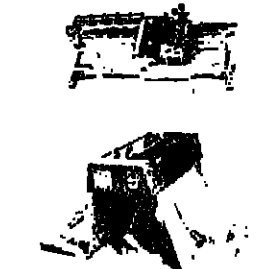
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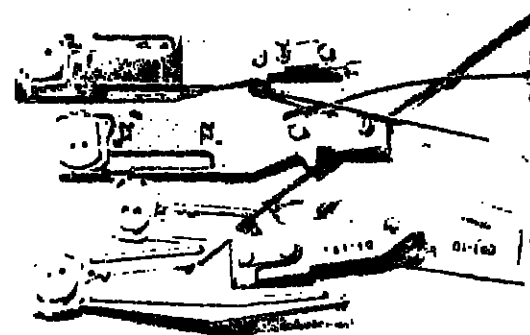
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New Decade — New Job

How DP tasks will change in the 1980s

ALL jobs in data processing, regardless of their title, come down to three functions:

1. Deciding what is required to be done (analysis). This is different from deciding what is to be achieved, which should be a function of the user, and not of DP. In most instances the "what" decisions are made by someone with the job title, systems analyst or sometimes, O&M practitioner.
2. Deciding how it is to be done (design and programming). The "how" function divides traditionally into system design and programming. The job titles range from systems analyst through analyst/designer, analyst/programmer, designer/programmer to programmer — and not forgetting systems programmer.
3. Doing it (operating). The common factor among the people taking part in this function is the word "operator" — peripheral, console, data preparation and so on.

The sharp end of change is provided by hardware, the jet plane dragging behind it the farm-cart of software.

So which, out of hardware and software, will have the greater effect on tasks to be performed and numbers of people required to form them in the next ten years? In terms of hardware research and development, ten years is a generation; in terms of hardware production (and obsolescence) ten years is several lifetimes.

In contrast, to develop a single new programming language (Ada perhaps destined to be less wayward than most of its predecessors) an estimated five years is needed, from the point where the language has been specified to a sufficient extent for a multi-million dollar choice to be made; and then we can only suppose that the five-year target will be met if we suspend the scepticism over such targets which has now become traditional.

However, what about database languages, user

enquiry languages, and all the other software goodies? I have read suggestions, from people who should know better, that such wonders will make systems analysts redundant.

I see not the slightest sign that any technology might replace the systems analyst. There were systems analysts (under the titles of O&M or Work Study) long before there were computers; and the greater the impetus towards integration of systems, the greater the need for systems analysts.

But what, you may say, about the greater availability of hardware, so that each user function has its own? Why cannot the user departments do their own analyses? The same argument applies; people occupying user functions are selected and trained for the given function rather than for systems analysis. If we all paint our own houses, however badly we do it, we can live with it till next time; if we design our systems badly, the com-

mercial and political environment may ensure that there is no next time.

The design function is undoubtedly amenable to change, and technology has seen the arrival of specialists in such sub-divisions of software as operating systems, database and telecommunications. As such specialists come mainly from the general programming ranks, the main effect is to aggravate the shortage of programmers. I see no reason to suppose that this tendency will not continue.

What, then, about the effects of applications packages on demand for programmers? As long as 80% of programmers are employed in maintaining existing programs — a figure which emerged from the NCC study in 1974, Jobs Trends in Data Processing and repeatedly confirmed — if all new installations used nothing but packages, the effect could be no more than to slow down the rate of increase in demand for programmers.

That seems to dispose of the possible effects on the first two of my three proposed functions. What of the various classes of operator? The rate of increase in the number of data preparation operators was already slowing down in 1974 due mainly to the change from card input to key-to-disc. Since that time VDUs have proliferated and it seems reasonable to suppose the card-punching will finally disappear within the next ten years. However, the expected increase in the use of direct input, by optical and magnetic reading devices, shows no signs of making a significant impact on the number of keyboard operators required.

It is reasonable to expect a continuation, and speeding up, of the tendency towards keyboard input, as well as computing power, being placed within the user department rather than in a central service, and the job to be done in a user department can be expected to demand rather

more thinking than is required in a central data preparation department so, perhaps, providing fewer opportunities for the school-leavers classified as "less able."

What will be the effect of the electronic office, where the manager enters his own data through the keyboard on his desk? This may sound like heresy, but I believe that this will never happen in this country. I know that it is commonplace in the US, and we are always supposed to follow the US in any application of technology. However, I believe that, in this instance, we may find ourselves in the fortunate position of those who, earlier, followed us into the industrial revolution.

It is my belief that the keyboard on the manager's desk is a temporary retrograde step, which will thankfully be retraced as soon as voice input and output become available; and I think that this will happen in time to avoid any substantial number of

by
George Penney

The author is career projects manager with the NCC

managers in this country ever taking that step backwards.

That leaves us with the computer room itself, which should be where the impact of new hardware technology will be felt first.

As long as batch work continues — and some jobs are so obviously suited to batch processing that there is no reason to suppose that they will ever disappear — there will be need for job assembly and input/output operators. However many minicomputer installations have never employed anyone specifically as a computer operator, and this tendency must grow.

What should employers be doing? The only function which seems destined to be affected radically in the next ten years, in terms of numbers required, appears to be operating. Perhaps many of those entering operating today will need to retrain within the next 10 to 15 years; but then, have you not retrained yourself every 10 to 15 years during your working life? I know I have.

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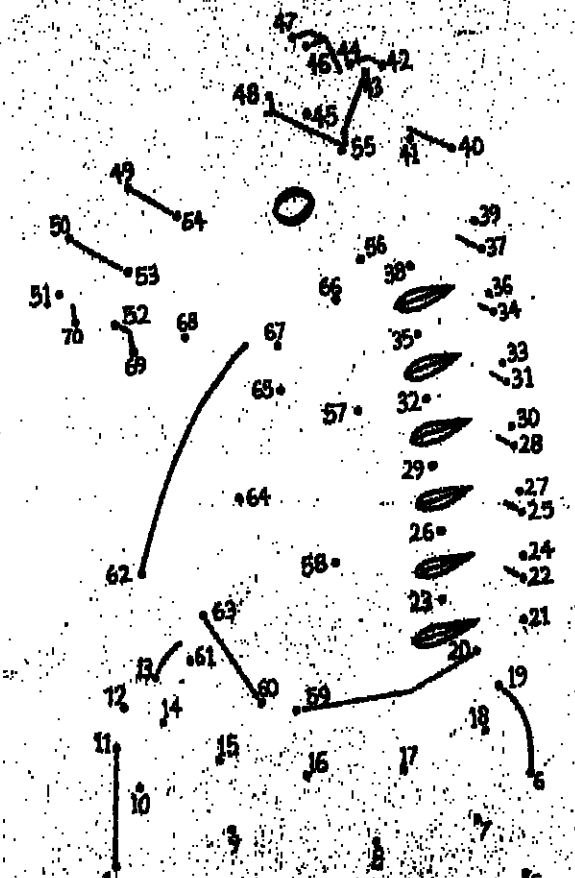
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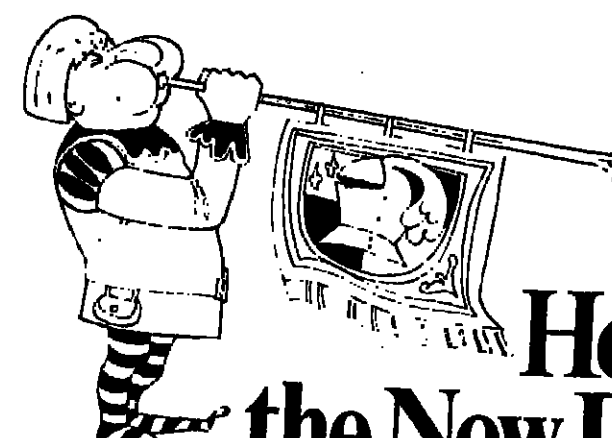
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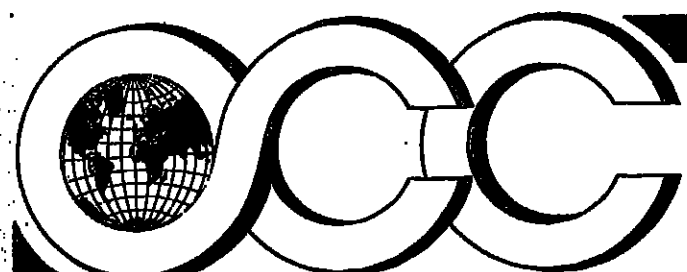
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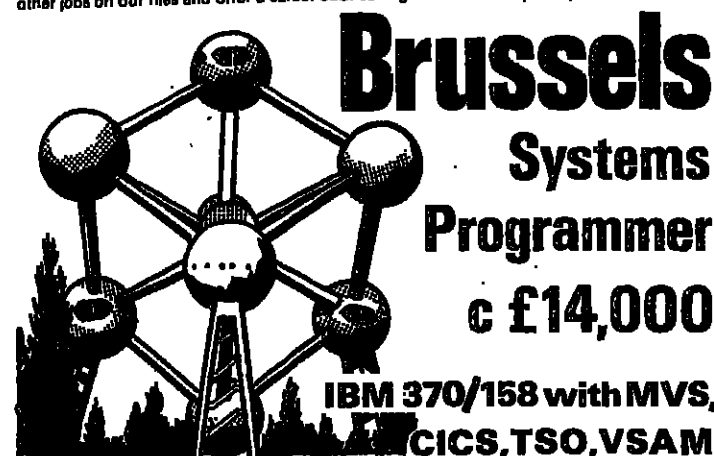
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Contact: Mike Creamer

Micro-Programmers

Berks

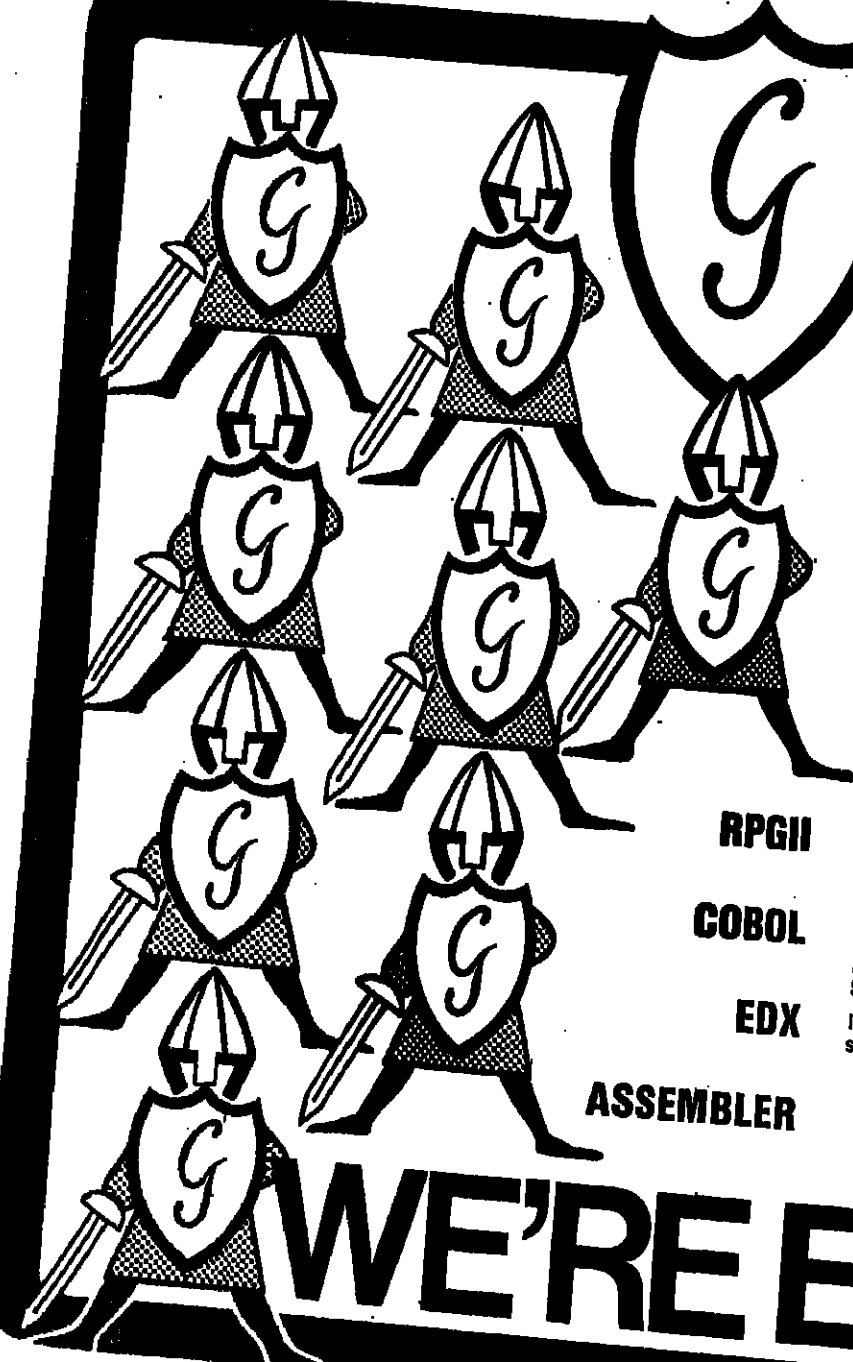
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A newly formed micro-systems company has a number of commercial development projects to undertake and requires Programmers to work on 8080 applications.

Candidates should have at least two years programming on commercial systems, using BASIC or COBOL. Contact: Jim Baker

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Contact: Bernard Kiernan

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Contact: Bev Stevens

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Contact: Mike Creamer

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Contact: Mike Creamer

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Contact: Jim Baker

**JAMES BAKER ASSOCIATES
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IBM System 34 Systems Analyst

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Previously relying mainly on external processing services, they are now installing IBM hardware and customising software packages to provide a total in-house capability, supported by on-line data entry and information access routines.

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Candidates will have had at least three years experience in an IBM Systems 3 or 34 environment, as both programmer and analyst. The ability to communicate well at all levels is particularly essential, as Systems Development in the manufacturing, commercial and finance areas will be a main initial role.

The successful candidate will benefit from induction training packages as appropriate, and also from the unique opportunities that such a demanding and ambitious project offers.

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It is anticipated that the current hardware mainframe will be upgraded during 1981. To qualify for one of these opportunities you will be expected to satisfy the majority of the following requirements:

1. A sound D.P. background gained from a number of years' experience in programming, through systems analysis, design and implementation within the financial accounting and/or commercial systems environment.
2. Specific experience gained from implementing Stock Inventory / Reporting Systems will prove advantageous.
3. You will be expected to portray the ability to manage Projects and where necessary to support programming personnel working in Cobol.

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Ref: CW/1/80

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They require to identify a well qualified candidate to fill the above role and in doing so, will expect the successful applicant to fulfil the following requirements:—

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The PDP is used continuously and employs colour VDU's for the man/machine interface. A new micro-processor-based telemetry system is being installed, and the software to fully utilise its capabilities has to be developed.

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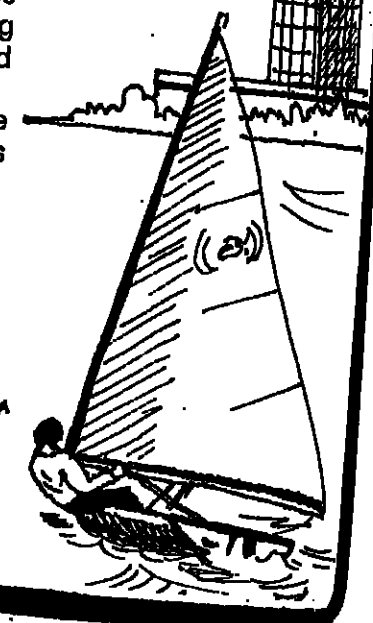
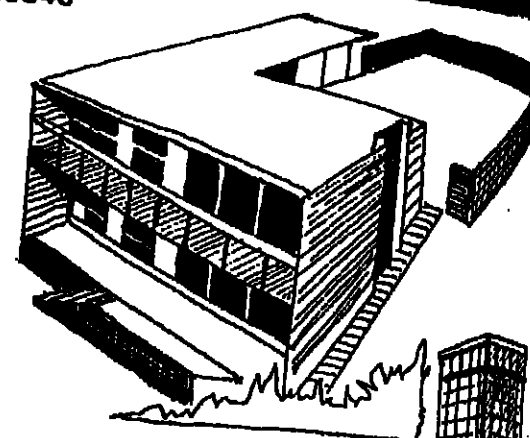
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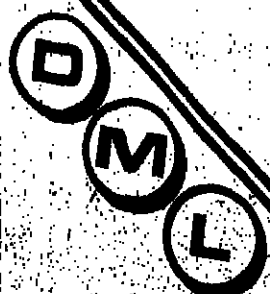
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2. CHIEF SYSTEMS PROGRAMMER
3. SENIOR SYSTEMS PROGRAMMER
4. SYSTEMS PROGRAMMER
5. CHIEF OPERATOR
6. SENIOR OPERATOR
7. APPLICATIONS PROGRAMMER

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ext. 2021
Closing date: 21
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LONDON BOROUGH OF BROMLEY

Senior Systems Analyst

PO.1(f) Salary up to £7326 (Ref. B.721)

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Ideally applicants will have proven experience in both programming and systems design following formal training. Possession of the NCC Certificate in Systems Design would be an advantage. Starting salary will be commensurate with age, experience and qualifications.

Enquiries to Mr. R. Marshall, Computer Development Manager, Tel: 01-494 3333, Ext. 3285.
Application forms for Assistant Chief Executive (non-power), Town Hall, Bromley, BR1 1BB. Tel: 01-494 3333, Ext. 3314.
Closing date 17th January, 1980.

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£7,000 to £10,000

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Past experience of Accounting, Distribution, Payroll and general commercial systems is required. Candidates should preferably be educated to a minimum 'A' level standard, whilst preference will be for an HNC/D or degree.

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Tony Kline — 021-454 7908

or John Wood — 0782 623665

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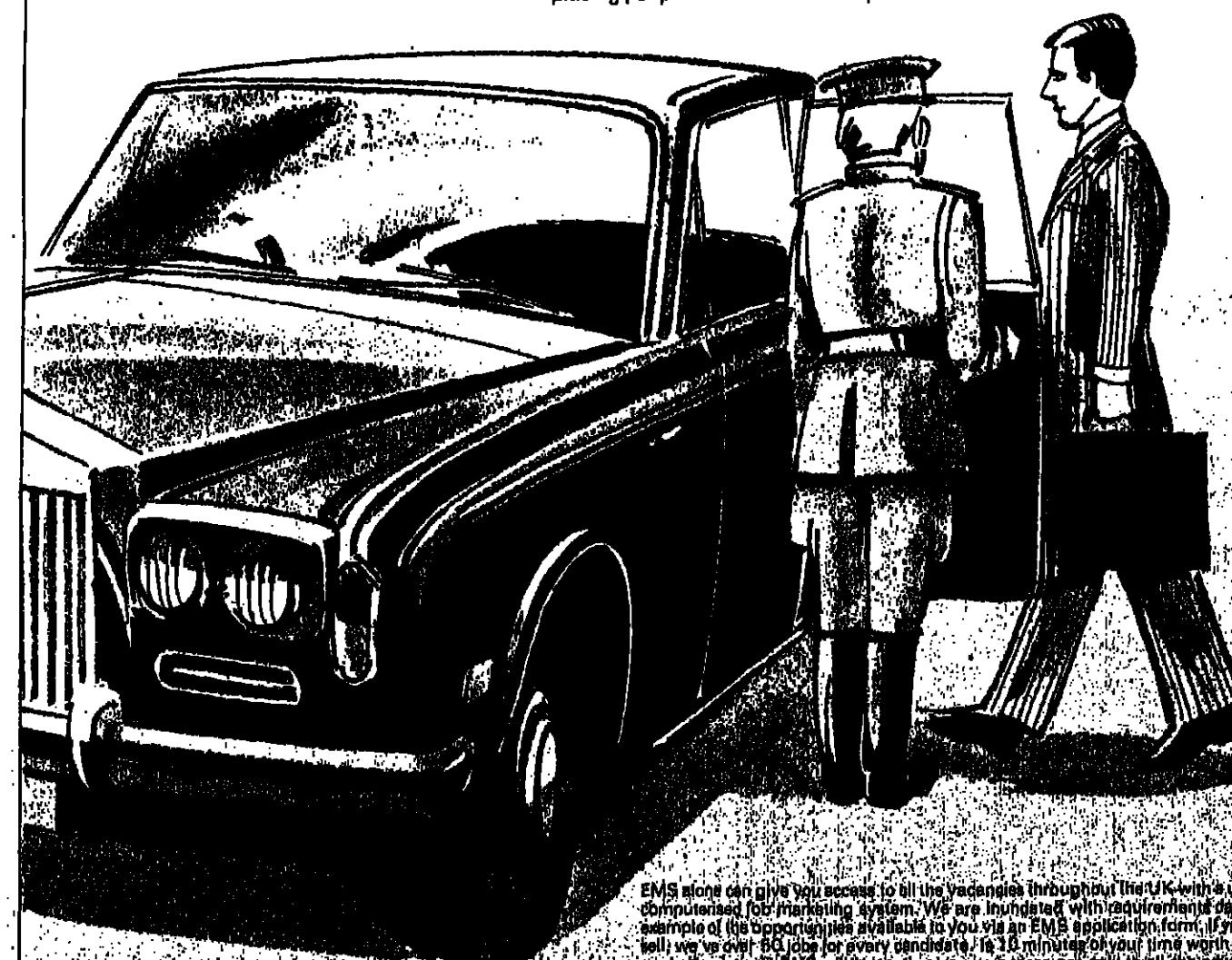
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£7.5-11.5K

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Company owes its continuing success to the breadth and depth of computer skills and experience of its staff. They offer you the backing of a well-established, widely disciplined staff organisation, together with unrivalled opportunities to acquire new skills. Full relocation expenses will be met where applicable. We would like to hear from interested candidates as soon as possible with a view to arranging an early interview.

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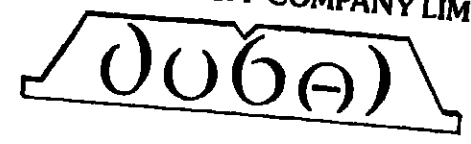
PL/I

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Process Systems Analyst

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Competent people with relevant experience and a taste for demanding start up situations are required to establish the company's operation on a sound basis. The first cells were energised in Oct. 1979.

The appointed candidate will develop and maintain a computerised process control system and supporting hardware in a multi computer network environment. Candidates must be 25-40 and have at least five years' experience in solid state electronics employing use of CMOS, TTL HTL logic and computerised process control. Computer interfacing experience to complex control electronic equipment plus computer languages (FORTRAN PLI or Assembler) is desirable but not essential. Tax free salary around Dhs 89,945 (£1.00 = Dhs 8.25 approx).

The appointment is on a single or married status basis. Benefits include free furnished accommodation, car allowance and a provident fund. Dubai offers a stimulating working environment and the opportunity for families to enjoy a wide range of leisure activities. Please write - in confidence - to G. E. Howard ref. FY.1081-30.

MSL middle east
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International Management Consultants
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Systems Analyst/Programmer

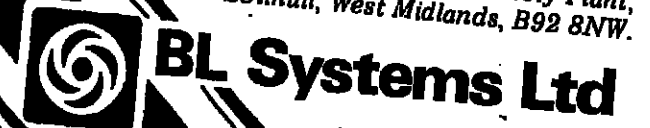
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Here's a chance to make your special experience pay off. Like to know more? Then write to:

Mrs. T. Fenton, Staff Recruitment Officer,
BL Cars, Lodge Lane Assembly Plant,
Solihull, West Midlands, B92 8NW.



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Applicants should have a degree or be otherwise professionally qualified. Salary will be within the range £4,232-£7,951 or £7,257-£12,000 (subject to review). Applications are available from The Registrar, College of Wales, Old College, King Street, Aberystwyth SY23 3DA. Closing date for applications: 16 January, 1980.

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Our expansion continues and we need to recruit people at all levels but we will expect applicants to have: a strong education record, ideally with a computer science degree; a clear interest in and demonstrable understanding of basic software; and, for the more senior positions, a record of relevant achievement.

Experience in the following fields are of particular interest:

- ★ COMPILER WRITING
- ★ OPERATING SYSTEMS DESIGN
- ★ SOFTWARE DEVELOPMENT TOOLS
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David Rodway, Managing Director,
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We are looking for a man or woman with two or more years' COBOL experience and who is capable of making an immediate contribution in these areas.

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To arrange an interview please contact: D. Short, Personnel Manager, Hall and Hall Limited, Oldfield Road, Hampton, Middlesex. Telephone: 01841 2244.



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The prime areas for expansion are within the fields of Data Base Development, Manufacturing Systems and On-Line Applications.

Applicants for Systems Analysts should have graduate level education plus a minimum of three years data processing experience in manufacturing and financial applications.

Applicants for Programming should have at least 2 years experience with high level language, preferably in an O.S./V.S. environment.

Successful applicants will enjoy excellent large company benefits, including up to 24 working days holiday, first class dining facilities, on-site squash courts and, where applicable, a generous relocation package to move into the West Midlands area.

Applicants (male and female) should write giving full details of age, qualifications and career history, stating the name of any organisations to whom your letter may not be sent, to:

Mr. T. G. West (Ref. No. 508)

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No job advertisement which indicates or can reasonably be understood as indicating an intention to discriminate on grounds of sex (e.g. by inviting applications only from males or only from females) may be accepted unless:

- (1) the job is for the purpose of a private household or
- (2) it is in a business employing less than six persons or
- (3) it is otherwise exempted from the requirements of the Sex Discrimination Act.

A statement must be made at the time the advertisement is placed saying which of the exceptions in the Act is considered to apply.

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THE SALES BIT

Coping with pressures

I HAVE always envied people with a sense of purpose - those individuals with the strength of character to be single minded, no matter what the pressures or distractions.

How nice it must be to schedule one's work instinctively and in a rational way, so that the most important tasks are always given the attention and priority they truly merit.

A couple of weeks ago I was talking about the benefits of positive thinking as applied to the will to win, and confidence to win, and suggested that one might do worse than accepting a New Year resolution to avoid negative attitudes in that context. Having said that I was unsure what my own New Year resolution would be, I am now resolved to concentrate my positive thinking on giving the right priorities to my daily work.

You must have witnessed the classic situation many times before. The desk covered in a mass of paper debris, total chaos when the job priority is FIRST IN/FIRST OUT - efficiency in rapid decline, every task with equal priority, an air of despairing abandon, and just a hint of futility.

One might say that this kind of situation falls into three categories:

1. Pressure due to personal disorganisation.
2. Pressure due to indiscriminate interruption.
3. Pressure due to work overload.

In the first case, it is difficult to accept that one is permanently or occasionally a badly organised person. However, it is reasonable to say that the same disciplines of keeping things in their place and dealing with them according to their relative importance is as applicable to the disorganised mind as it is to the meticulous. Consequently, there exists the same need for organisational discipline whatever one's natural tendencies might be.

Some people are well organised until the pressure is on, and suddenly they go to pot only to re-emerge as their former selves once things have quietened down. Nearly always, the originating source of pressure is outside the individual's control.

The worse kind of pressure is the distraction of indiscriminate interruptions which create an artificial workload that, by its very nature, demands absolute priority, ie immediate attention irrespective of the importance of the task in hand. The prime examples are the telephone, and people who 'pop in' for a quick word.

The gregarious, the warm-hearted, the considerate, the helpful and the altruistic are all prone to this indiscriminate and inconsiderate type of invasion.

There you are, writing the key section of an important sales proposal that you have faithfully promised will be with the client that day when the telephone rings. Nothing is more important than that completed sales document, but you pick up

the telephone and it's Miss Trivia, the sales director's secretary, who has a desperate problem with her rubber plant and could you render immediate assistance? Groovy though she might be, it's a damned nuisance, but you drop everything (to use a phrase!) and rush to her aid.

On the other hand, it could be Mr Cockup, popping in from the production department to ask for a copy of a recent order because he's lost the original document. So, cursing as you go, you struggle through your inadequate filing system to find your copy, because the guy has problems and he needs your help - so you indulge him.

I call this the innocent exploitation syndrome. The inflator of the distraction assumes his helper has no more urgent task on hand for, had it been the case, the helper could have said so - couldn't he? - but, more often than not, you don't and, as a consequence, allow other people to exploit you. Whether they are aware of it is irrelevant.

How silly! Nobody really wants to take advantage of your good nature. You only have to let them know that you are under pressure and they will go away, so be sure to tell them. That's not being rude - it's being honest and practical.

Disorganisation by overload is bad enough in itself, but exacerbated by interruption could easily lead to insanity. There's only one thing to do in a total overload situation - STOP!

Evaluate the outstanding tasks, separate the non-essential from the essential and put the former to one side for attention in easier times, sort out the essential tasks in order of importance and make a list of them. Then start work again in strict order of practical priority, refusing to see or speak to anyone unless they can convince you that their problem is more urgent than yours.

People react to pressure in a wide variety of ways. A classic is the Nero syndrome. This is where individuals become so bewildered by an overload of problems that their minds virtually switch off, yet by way of a subconscious smoke-screen, they become deeply involved in some irrelevant task. One of the most important factors in solving the overload problem is knowing where to start. People usually phase out because a confusion of tasks in an un disciplined heap offers no reference point at which to start.

That's why a list of tasks by order of priority is essential. It's a control, a discipline and a statement of reality.

So Nero wasn't necessarily being casual as he played his fiddle(?) while Rome burned - he simply couldn't find his job list.

TRADER

Puzzle Answer

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Our clients are looking for someone with a good ICL 1900 and/or 2903 background. COBOL programming would be an advantage.

ENE6
Ref. M3596

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Essex
Various

3 months
8 months
6 months
3 months
6 months
Indef.
Indef.
Indef.
Various

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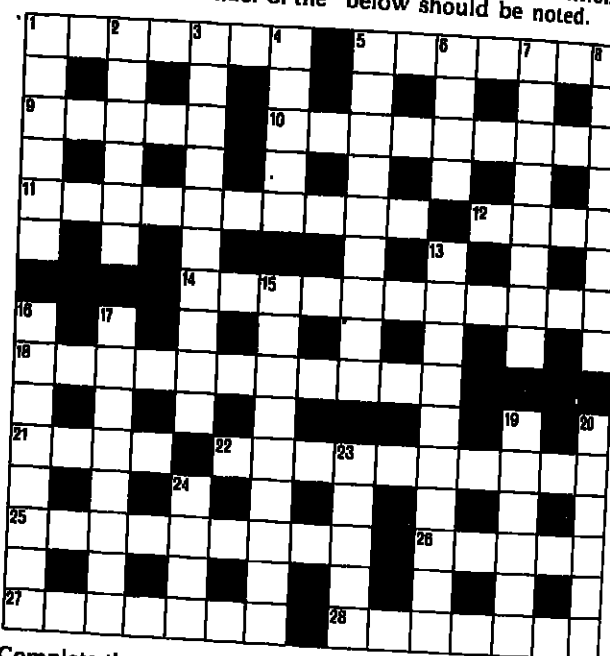
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GW prize crossword No1

THIS week we publish the first Computer Weekly prize crossword. Each month Alec Robins, who provided the highly popular MRL puzzle, will be compiling the square for the CW competition. He is one of the country's foremost crossword experts and is known to thousands of devotees as Custos of the Guardian, Everyman of the Observer, and Zander of the Listener. He is also the author of several books on the art of crossword.



Complete the crossword in ink or ballpoint please. Fill out name and address on entry form and return to: Crossword Competition, c/o Computer Weekly, Dorset House, Stamford Street, London SE1 9LU.

Name _____ (Miss, Mrs, Ms, Mr)
Address _____
Telephone _____

I accept the rules and conditions of the Computer Weekly Crossword Competition.

Signed _____ Date _____

ACROSS

1. A very bright light constantly follows the sailor (7)
5. Rowed gently, with body protected, round the lake (7)
9. Sort of dress for noisy modern music (5)
10. Flag carried round retreating Emir's boundary (9)
11. Cute lad, one made tipsy and completely relieved of money (7,3)
12. Poke gently with a stick (4)
14. Prohibit nurse holding at home a heraldic device (3,8)
18. Observe recurrent depression, for instance in the French school (4,7)
21. Squabble resulting in decapitated corpse (4)
22. Attack caused by bad gin, so rages (10)
25. Gasp, meeting a crazy fellow, a feeble old man (9)
26. One ball-point pen brought back for a buck (5)
27. Edward has unpaid debts - it's irksome (7)
28. Sensual desire and strong drink lead to a five-year stretch (7)

DOWN

1. Disfigure one after having had food knocked over (8)
2. Girl initially gets distracted lover to crawl abjectly (6)
3. Captured a defender, surprised (5,5)
4. Fleet makes attack, rounding tip of promontory (5)
5. I'm prickly, and long to grasp gold trophy (9)
6. Obscure eastern coin (4)
7. To get educated, you've Latin to do again (8)
8. They treat with scorn 40 per cent of Derby jockeys (8)
13. Sin or dancing in low haunts offering amusements (10)
15. Strict priest comes upon soldier engaged in endless wake (9)
16. Blotch on skin - he's apt to become embarrassed (8)
17. Cheat subjected to monetary penalty and imprisoned (6)
19. Muslim VIP - in other words, that is to say, leader of regime (6)
20. Weak in business (8)
23. Narrow passage right up in the kidneys (3)
24. Henry's given love a light ring (4)

Rules and Conditions

1. Each competitor must submit no more than one entry.
2. All entries should be sent to Crossword Competition, Computer Weekly, Dorset House, Stamford Street, London SE1 9LU, to arrive by the first post on the Friday in the week after publication.
3. The competition is open to all readers of Computer Weekly with the exception of the staff of IPC Business Press Ltd, any printers employed by them or the near relatives of any such staff.
4. The solution of each puzzle will normally be published in the issue three weeks after the puzzle has been published.
5. Winners will receive their prizes during the month following the publication.
6. The decision of the editor on the interpretation of the rules and conditions and on all matters relating to the competition shall be final. No correspondence will be entered into.

Our Clients are a fast-growing British Computer Manufacturer based at Stevenage, their current turnover is in excess of £3¼ million and confidently expect to exceed £6 million during 1980. In addition to being a manufacturer they also have a software house and their own maintenance and media supplies Company, and are one of the few Organisations in Great Britain to have their own rental facilities.

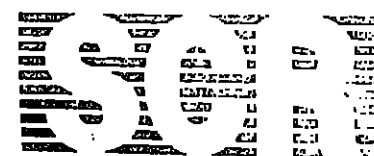
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For confidential interview you should CONTACT ME: Tony Blakeley, on 061-833 or 061-8996 Evenings and Weekends.



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UNIVERSITY OF BIRMINGHAM
RESEARCH FELLOW/
COMPUTER OFFICER

A Research Fellow/Computer Officer is required to assist the above Group in the development of demonstration material on MICROPROCESSOR SYSTEMS and INDUSTRIAL APPLICATIONS for inclusion in courses offered to industry. The successful applicant will be expected to have closely with industry and to act in a consultative capacity on specific applications. Preference will be given to professionally qualified candidates who have relevant experience and are familiar with a range of microprocessor systems. Salary will be in the range of £4,333-£7,511 plus superannuation. Further particulars are available from Mr. H. Bushaway, The Computer Centre, University of Birmingham, P.O. Box 363, Birmingham, B15 2TT. To whom applications (3 copies) including full curriculum vitae and naming three referees, should be sent by Friday, 25th January, 1980. Please quote ref. COW1.

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Letters not forwarded will be destroyed and no correspondence can be entered into.

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SENIOR SYSTEMS
ANALYST
THE COMPUTER CENTRE

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Application forms and further details are available from the Personnel Officer, The Queen's University of Belfast, Belfast BT7 1NN, Northern Ireland. Closing date: January 18, 1980.

UNIVERSITY COLLEGE, CARDIFF
ASSISTANT
COMPUTER OFFICER

Applications are invited for the post of ASSISTANT COMPUTER OFFICER in the User Services Group at the COMPUTING CENTRE. The post also includes providing an Advisory Service to computer users as periodic supervision of a Faculty computing area, which includes a remote job entry station and interactive terminals. Knowledge of Fortran is required and experience of Algol and/or Basic is desirable, a degree qualification is not essential. This is a fixed term appointment, renewable for a minimum of three years, within the salary range £3,775-£4,333 p.a. (under review). Duties to commence as soon as possible.

Application forms, together with further particulars, are available from the Vice-Principal (Administration) and Registrar, University College, P.O. Box 78, Cardiff CF1 1XL, to whom the completed forms should be returned by no later than 21st January, 1980. Reference 1981.

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COMPUTER SECTION

Software Design
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Applications are invited for the post of Analyst/Programmer. The successful applicant will be required to assist the Senior Software Designer in the development and maintenance of installation software, including real-time programs, and should be experienced in PLAN, COBOL, ICL Data Communications Software and George 2+. The duties will also include application analysis. The equipment consists of 2 x 2904 Computers (48K and 64K) with the one processor used solely for communications. Salary Scale: £5,382 to £7,338 with placing according to qualifications and experience. Post superannuable; 5-day week. A comparability study of local authority salaries is due to be implemented with effect from January 1, 1980.

Applications, stating age, educational qualifications and details of relevant experience, should be lodged with the City Chamberlain, Town House, Aberdeen AB9 1AH, by January 16, 1980.

JOHN M. WILSON
Town Clerk and Chief Executive

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All classified copy should reach our offices no later than 5.30 p.m. on the Monday preceding Thursday's publication.

If complete artwork is supplied, 12 noon on a Tuesday.

Ring Ray Kelly for further details on 01-261 8016.